VOLUME II

TECHNICAL AND COST PROPOSAL

1 Executive Summary

Deutsche Bahn (DB) is pleased to provide its proposal for Early Train Operator (ETO) in response to the California High Speed Rail Authority's (Authority) Request for Proposal (RFP) No.: 16-13.

In preparing this proposal, DB has drawn on its vast global experience planning for and operating intercity and high speed rail services, complemented by the familiarity with US and California requirements for passenger rail systems that Alternate Concepts Inc. (ACI) and HDR Inc. (HDR) possess. As a team, DB believes that we are best positioned to provide the Authority with the highest levels of technical expertise applied to the political, fiscal, legal and regulatory environment into which the California High Speed Rail (CHSR) planning process will fit.

Recognizing the need to maintain the momentum achieved to date, DB is ready to mobilize immediately upon receipt of a Notice to Proceed (NTP). We are committed to working in close partnership with the Authority and the Authority's Rail Delivery Partner (RDP) through working groups, document submittals and regularly scheduled meetings in order to address the many technical and policy decisions that lie ahead. One of our roles will be to look across task order boundaries in order to properly integrate decision making.

Our proposal is organized around the 16 general consulting topics and the eleven (11) Key Deliverables that will lay the groundwork for Second Phase operations and establishment of the Train Operating Company (TOC). It describes the approach we will take for each of the consulting topics along with a preliminary schedule of work activity and our mobilization approach. The proposal is also informed by the reference materials provided by the Authority, including the 2016 California High Speed Rail Authority's Business Plan, Ridership and Revenue Forecasts, Term Sheets, LCC Model, Operation & Maintenance Cost Model and Sustainability Policy. Incorporated in the narrative are references to other local planning activities such as the Capital Corridor grant related to ticketing integration.

Innovations that DB is prepared to propose based on our experience elsewhere are sprinkled throughout the Proposal. These include StationGreen (Kerpen-Horrem), Europe's first climate-neutral station, and DB Navigator, one of the most frequently used mobility applications in Germany. Although Section *Provision of other Services*, is undefined in the RfP, DB has suggested additional consulting activity that could further the goal of ensuring the system is designed with long-term operational efficiency in mind. We are also interested in exploring with the Authority the best way to coordinate responsibility for train operations, infrastructure maintenance, vehicle maintenance and dispatch.

While the First Phase narrative describes our approach to consulting with the Authority and preparation of the Key Deliverables, the section addressing Second Phase, turns more to how DB will establish the Train Operating Company (TOC) and how it will implement the policies and procedures developed during the First Phase. In particular, it describes how we will mobilize, train personnel, support testing and commissioning and implement safety and security on the system.

DB is the largest operator of multi-modal integrated transportation systems in the world. We operate over 1,600 miles of high speed rail (HSR) in Europe and provide first-class and

environmentally friendly and efficient mobility and logistics solutions driven by dedicated employees and digital expertise. We have captured our corporate knowledge, experience and learning through our portfolio of products and services across all disciplines, including system design, harmonized fare and service strategies, customer service, safety and security, and training, to name a few. By partnering with DB, the Authority will have complete access to the entire portfolio, which will provide for increased speed to market, comprehensive risk assessment and management, cost avoidance, rigorous planning, operational learning curve efficiencies and robust revenue and marketing strategies.

DB's objective is, with the Authority, to develop and operate a financially self-sustaining HSR System with real enterprise value. During the first year of the First Phase, we will, in close collaboration with the Authority, confirm the approach, schedule and costs associated with achieving this objective. California has embarked on a ground-breaking project to bring true HSR to a state that is increasingly trying to break the grip of automobile dependency by offering convenient, modern transit alternatives. DB stands ready to help the Authority implement this visionary project and, in doing so, to take another major step forward in improving regional mobility and air quality while at the same time creating new economic opportunity, especially where it is most needed.

2 Approach and Methodology

Comments to the structure of the Approach and Methodology

As depicted in the table below, there is a relationship between General Consulting Services, Key Deliverables and Milestones to be achieved before commencement of negotiations for the Franchise Agreement. For consistency sake, DB's approach with respect to all Deliverables, including Deliverables 2, 3, 4 and 9, is described in the First Phase section of our proposal, with correlating references to those Deliverables in the Interim Financial Plan.

General Consulting Services		Key Deliverables / Deliverables
1	Procurements relevant to revenue operations (such as Rolling Stock, Track and Systems, Energy and Stations) and ancillary revenue opportunities. Such consultation shall include, but not be limited to:	KEY DELIVERABLE 11 - Formal concurrence on procurement process/documents substantial to achieve Key Milestone 2 and 3 to commence negotiations of Franchise Agreement
2	Optimization of whole life, capital and life cycle costs associated with Rolling Stock, Track and Systems and Stations.	Relevant to Procurements (KD 11); Ridership & Revenue Forecast (KD 2); Operations and Maintenance Costs (KD 4)
3	Station design and operations.	- Support RDP with Station Layout - Develop individual Station operation plans
4	Rolling Stock fleet size and design and interior layout.	- Relevant to Procurements (KD 11) and Operations and Maintenance Forecast (KD 4) - Input for LCC and LCC input for Rolling stock fleet size and interior layout
5	Fare integration and inter-operability between transportation operators connecting with or to the System.	KEY DELIVERABLE 6 - Integration plan for State wide rail service - Input to Ridership & Revenue Forecast (KD 2); Ancillary revenue scenario analysis (KD 3); Service planning

6	Security and safety arrangements for the System.	KEY DELIVERABLE 8 - Preparation of a safety plan; Relevant to Phase 2 System safety planning and management and system security coordination;
7	Operations control systems including dispatching responsibilities.	Relevant to Integration plan for State wide rail service (KD 6)
8	Service planning and scheduling for both the System and connecting buses that the Authority expects will be run by the Contractor.	Relevant to Integration plan for State wide rail service (KD 6) and Ridership & Revenue Forecast (KD 2)
9	Opportunities to maximize System revenues	KEY DELIVERABLE 3 - Ancillary revenue scenario analysis Major input for Interim Financial Plan
10	Ridership and passenger revenue forecasting	KEY DELIVERABLE 2 - Calculation of ridership and passenger revenue forecasts Major input for Interim Financial Plan
11	Operations and maintenance (O&M) cost forecasting.	KEY DELIVERABLE 4 - Calculation of operations and maintenance cost estimates Major input for Interim Financial Plan
12	Contractor required insurances and interface with insurances provided for under long term design-build-maintenance contracts and Authority insurances.	Relevant to Formal concurrence on procurement process/documents (KD 11)
13	Preferred revenue collection systems	KEY DELIVERABLE 5 - Analysis and report on preferred revenue collection systems.
14	Marketing and branding strategy for the system.	KEY DELIVERABLE 9 - Plan to market and brand the system Major input for Interim Financial Plan
15	Risk management including risk registers in the Authority Risk Management System.	Relevant to Interim Financial Plan
16	Provision of other Services identified by the Authority for future operations and management of the System.	tbd
Other Services necessary		Key Deliverables / Deliverables
17	Project Management	KEY DELIVERABLE 1 - Mobilization Plan KEY DELIVERABLE 7 - Mobilization plan for pre-operations testing and training. (Key milestone to commence negotiations of the Franchise Agreement and Condition Precedent to effectiveness of Franchise Agreement)
18	Interim Financial Plan	KEY DELIVERABLE 10 - Interim Financial Plan substantial to achieve Key Milestone 4 to commence negotiations of Franchise Agreement and basis for the Second Phase Financial Plan (Condition Precedent to effectiveness of Franchise Agreement)

A. Approach to First Phase

i. Mobilization Plan (Key Deliverable 1)

Being active globally in a variety of foreign markets, including non-European markets, DB is well positioned to plan, mobilize and operate the CHSR. DB's approach, and one of the cornerstones of our success in implementing HSR projects in foreign jurisdictions, is through localization and local partnership. We have found this approach very successful in France, Taiwan, Abu Dhabi and Qatar; and will take this approach in California as well.

DB and its subcontractor ACI have extensive experience in the mobilization and integration of rail projects. DB brings specific knowledge and experience in the mobilization and integration of rail projects. In Abu Dhabi for Etihad Rail, DB was a shadow operator for the first stage of the rail freight network in UAE including commissioning and testing. Within this first stage, DB was responsible for the identification of positions needed and recommended staffing levels. ACI brings US mobilization experience for operation and maintenance of commuter rail (Denver and Boston), heavy rail (Puerto Rico), and light rail (Phoenix and Maryland) systems. All but Phoenix were either P3 or DBOM contracts. All except Boston were operational start-ups. Both Denver and Boston are FRA-regulated rail systems. Recently, ACI was awarded the contract to operate new intercity service from Springfield, MA to New Haven, CT, which will also be FRA regulated. Through its operating contracts, ACI has developed strong working relationships with the FRA and FTA. HDR holds contracts with nearly every commuter and intercity rail agency in the state including Metrolink, NCTD, Caltrain, SANDAG, SANBAG CCJPA, ACE and TAMC.

Mobilization

Together with the Authority, DB will establish an integrated organization in which the mission is understood, effective communication among disciplines is a priority, task assignments and deliverables are clear, schedule adherence is a must and decisions are made based on the collective experience of our team and the best available information and analysis. Upon NTP, DB's four Key Personnel:

- Jorge Rios, Project Director
- Joachim Mayer, Lead Procurement Advisor
- Mark Evans, Lead Commercial Advisor
- Michael Hässler, Lead Operating Manager

will relocate to the Authority's office in Sacramento for the performance of all First Phase work, including the development and submission of all Key Deliverables and task order work as assigned by the Authority. We will also deploy an **Operation Integration Manager** whose primary role is to review and provide expert input, ideas and suggestions regarding the operability of the system from two standpoints. 1. is the Passenger Experience and 2. the operations employee experience.

This expert will participate in design reviews of systems and fixed facilities in support of the Operations Advisor throughout the procurement of life cycle and provide a point of view from the passenger and operator.

In preparation for this submission, DB worked with Pendergast Consulting Group (PCG) to identify several small business, disadvantage business and disadvantage veteran business enterprises to support First Phase. Our efforts to date have resulted the identification of several SBE/DBE or DVBE firms that will offer a range of technical support, including, for example,

marketing, station design, fare collection systems, safety, vehicle and systems planning and signaling. Please refer to Section *Small Business Utilization Plan* for the complete listing.

To align our organizations and develop a true sense of team, DB suggests holding regularly-scheduled internal partnering meetings with the Authority and the RDP, as described in the figure below. The ultimate goal of the partnering meetings and technical working groups will be to ensure ongoing coordination and communication, and timely informed decision making.

Partnering Meetings	Technical Partnering Meetings	Technical Integrated Working Groups
• Establish Phase 1 Goals Initiatives and Priorities • Initial Meeting • Subsequent Meetings as needed, but not less than annually • DB and the Authority	• Establish Mutual Goas and Priorities for Each Technical Area • Establish a Process for Escalating Issues • Initial Meeting • Subsequent Meetings as needed, but not less than annually • DB, the Authority and Subcontractors	• Discuss and Resolve Technical Matters • Support Timely Decision Making • Provide an Informed Holistic Response • Weekly Meetings, or as needed to support the work • Technical Staff from DB Team and the Authority

Within 30 days of NTP, DB will prepare a First Phase Mobilization Plan **(Key Deliverable 1)** that details and schedules all necessary activities for a timely mobilization and completion of First Phase activities. The schedule below provides an overview of our proposal to deliver the required work and achieve the objectives of the project during First Phase. The scheduled activities are based on the scope of work in the RfP and organized in the schedule by Milestones; Project Management; General Consulting Services; and Interim Financial Plans, as follows:

Milestones: Here we show the most important milestones of the projects such as Date of submission of Key Deliverables; Key Milestones which have to be achieved prior negotiations of the Franchise Agreement and the Conditions precedent.

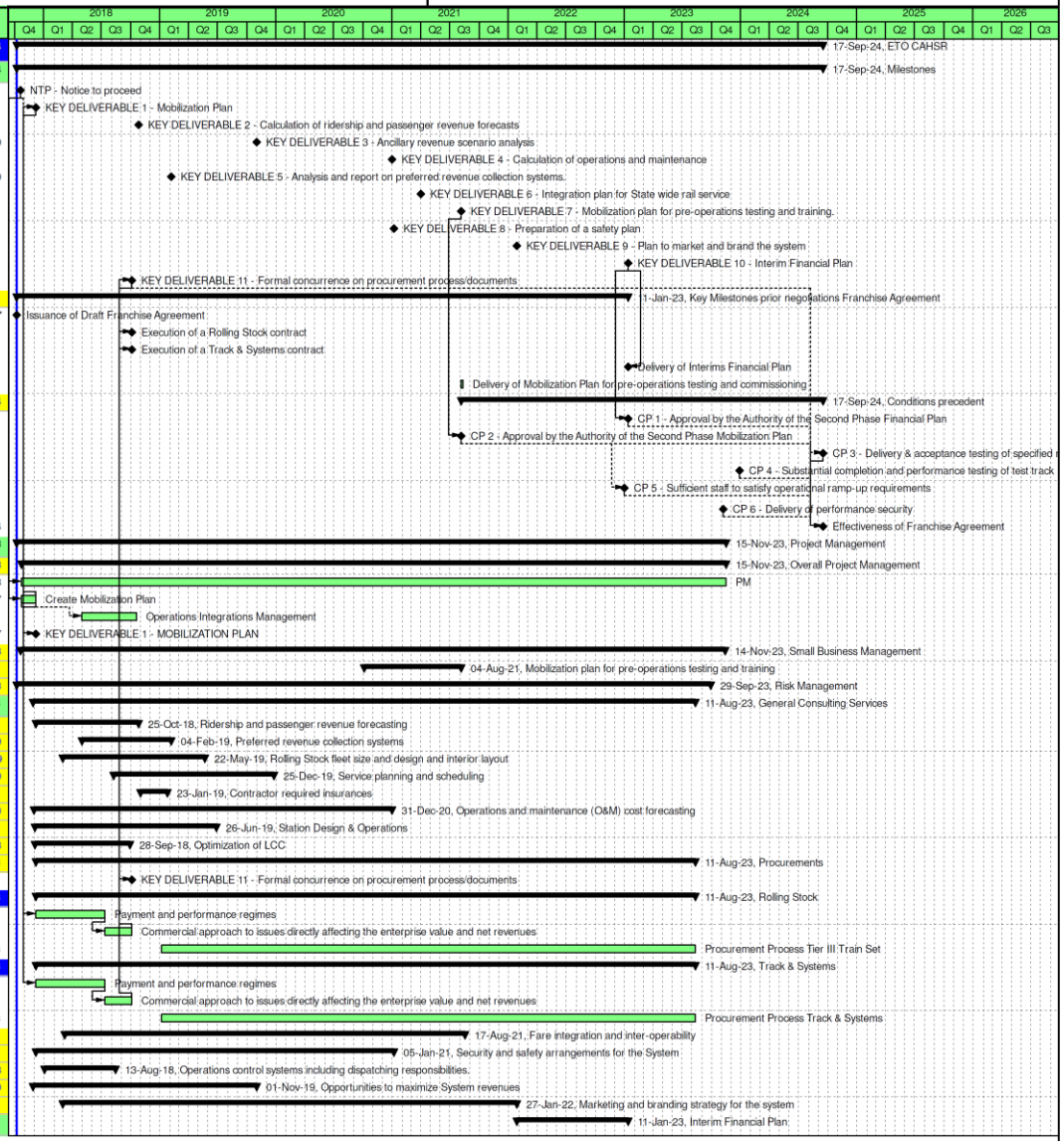
Project Management: The work package Project management contains the work packages Overall Project Management, Small Business Management, Mobilization plan for pre-operations testing and training and Risk Management.

General Consulting Services: Contains all activities necessary in order to provide the requested services and associated Key Deliverables

Interim Financial Plan: Contains all activities necessary in order to process the information and deliverables produced under the General Consulting services to stipulate the Interim Financial Plan.

ETO CAHSR | Standard Activity Status | 04-Sep-17 21:07

Activity ID	Activity Name	Original Duration	Start	Finish
ETO CAHSR		1807	06-Oct-17	17-Sep-24
Milestones		1807	06-Oct-17	17-Sep-24
M0	NTP - Notice to proceed	0	20-Oct-17*	
M01	KEY DELIVERABLE 1 - Mobilization Plan	0	07-Dec-17	
M02	KEY DELIVERABLE 2 - Calculation of ridership and passenger revenue forecasts	0	25-Oct-18	
M03	KEY DELIVERABLE 3 - Ancillary revenue scenario analysis	0		01-Nov-19
M04	KEY DELIVERABLE 4 - Calculation of operations and maintenance	0		31-Dec-2(
M05	KEY DELIVERABLE 5 - Analysis and report on preferred revenue collection systems.	0		04-Feb-19
M06	KEY DELIVERABLE 6 - Integration plan for State wide rail service	0		30-Mar-21
M07	KEY DELIVERABLE 7 - Mobilization plan for pre-operations testing and training.	0		04-Aug-21
M08	KEY DELIVERABLE 8 - Preparation of a safety plan	0		05-Jan-21
M09	KEY DELIVERABLE 9 - Plan to market and brand the system	0		26-Jan-22
M10	KEY DELIVERABLE 10 - Interim Financial Plan	0		11-Jan-23
M11	KEY DELIVERABLE 11 - Formal concurrence on procurement process/documents	0		03-Oct-18
Key Milestones prior negotiations Franchise Agreement		1369	06-Oct-17	11-Jan-23
KM01	Issuance of Draft Franchise Agreement	0		06-Oct-17*
KM02	Execution of a Rolling Stock contract	0		03-Oct-18
KM03	Execution of a Track & Systems contract	0		03-Oct-18
KM04	Delivery of Interims Financial Plan	0		11-Jan-23
KM05	Delivery of Mobilization Plan for pre-operations testing and commissioning	5	04-Aug-21	11-Aug-21
Conditions precedent		814	04-Aug-21	17-Sep-24
CP1	CP 1 - Approval by the Authority of the Second Phase Financial Plan	0		11-Jan-23
CP2	CP 2 - Approval by the Authority of the Second Phase Mobilization Plan	0		04-Aug-21
CP3	CP 3 - Delivery & acceptance testing of specified number of RST	0		17-Sep-2(
CP4	CP 4 - Substantial completion and performance testing of test track	0		29-Dec-2(
CP5	CP 5 - Sufficient staff to satisfy operational ramp-up requirements	0		30-Dec-2(
CP6	CP 6 - Delivery of performance security	0		06-Nov-2(
EFFECTIVE	Effectiveness of Franchise Agreement	0		17-Sep-24
Project Management		1589	06-Oct-17	15-Nov-23
Overall Project Management		1578	23-Oct-17	15-Nov-23
A1100	PM	1568	23-Oct-17	15-Nov-23
A1130	Create Mobilization Plan	30	23-Oct-17	06-Dec-17
A1140	Operations Integrations Management	124	01-May-18*	19-Oct-18
A1450	KEY DELIVERABLE 1 - MOBILIZATION PLAN	0		06-Dec-17
Small Business Management		1568	20-Oct-17	14-Nov-23
Mobilization plan for pre-operations testing and training		218	05-Oct-20	04-Aug-21
Risk Management		1556	06-Oct-17	29-Sep-23
General Consulting Services		1485	27-Nov-17	11-Aug-23
Ridership and passenger revenue forecasting		225	07-Dec-17	25-Oct-18
Preferred revenue collection systems		200	01-May-18	04-Feb-19
Rolling Stock fleet size and design and interior layout		320	01-Mar-18	22-May-19
Service planning and scheduling		360	09-Aug-18	25-Dec-19
Contractor required insurances		60	01-Nov-18	23-Jan-19
Operations and maintenance (O&M) cost forecasting		800	01-Dec-17	31-Dec-20
Station Design & Operations		403	04-Dec-17	26-Jun-19
Optimization of LCC		210	04-Dec-17	28-Sep-18
Procurements		1477	07-Dec-17	11-Aug-23
A1480	KEY DELIVERABLE 11 - Formal concurrence on procurement process/documents	0		03-Oct-18
Rolling Stock		1477	07-Dec-17	11-Aug-23
A1540	Payment and performance regimes	150	07-Dec-17	11-Jul-18
A1550	Commercial approach to issues directly affecting the enterprise value and net revenues	60	12-Jul-18	03-Oct-18
A1580	Procurement Process Tier III Train Set	1200	07-Jan-19*	11-Aug-23
Track & Systems		1477	07-Dec-17	11-Aug-23
A1560	Payment and performance regimes	150	07-Dec-17	11-Jul-18
A1570	Commercial approach to issues directly affecting the enterprise value and net revenues	60	12-Jul-18	03-Oct-18
A1590	Procurement Process Track & Systems	1200	07-Jan-19*	11-Aug-23
Fare integration and inter-operability		900	07-Mar-18	17-Aug-21
Security and safety arrangements for the System		800	06-Dec-17	05-Jan-21
Operations control systems including dispatching responsibilities.		160	02-Jan-18	13-Aug-18
Opportunities to maximize System revenues		500	27-Nov-17	01-Nov-19
Marketing and branding strategy for the system		1020	01-Mar-18	27-Jan-22
Interim Financial Plan		250	27-Jan-22	11-Jan-23



Approach for timely and informed feedback on the Authority's future procurements

Through the series of coordination and integration meetings described above, DB and the Authority will define a process by which issues are elevated, tracked and resolved. By identifying and engaging stakeholders early, DB will work with the Authority to identify stakeholder issues, develop consensus, and implement resolutions that advance the Project. DB including its subcontractors ACI and HDR will utilize a combination of staff and consultants to provide information to the Authority. DB will work with the Authority to identify a web-based system, like SharePoint and Bluebeam, to allow multiple reviewers to provide feedback.

Approach for including US and California specific knowledge / experience into the team

The FRA through the federal Code of Regulations, particularly 49 CFR Parts 200 to 299, will regulate important operational matters such as operating rules and practices; passenger train emergency preparedness; hours of service; railroad accidents and incidents, qualification and certification of locomotive engineers and train conductors and inspection and maintenance activities. Developing a close working partnership with the FRA will be critical to ensure that we are aligned with their interpretation of the existing rules and future rules that will impact the System.

While it has no direct oversight responsibility over HSR, the FTA has played a leading role in recent years developing new policies around both safety and asset management. MAP-21 and FAST Act legislation establish requirements for transportation agencies, many of which flow down to public transportation agencies and their contractors. DB will factor these requirements into its planning process.

Another federal agency with important influence over passenger rail systems is the Occupational Safety and Health Administration (OSHA), which sets and enforces standards for maintaining safety and healthy working conditions for employees. OSHA rules cover topics such as indoor air quality, walking-working surfaces, ergonomics, personal protection equipment, noise, workplace violence, fall protection, etc.

The National Labor Relations Board, National Transportation Safety Board, Environmental Protection Agency and Equal Employment Opportunity Commission all issue rules and provide oversight that govern aspects of railroad operations in the US.

DB, through DB Schenker USA, has gathered extensive experience and knowledge in the US In addition, DB has subcontracted with two prominent US firms that are very familiar with the federal and California regulatory environment as well as with the regional marketplace that will be served by the HSR system.

ACI has experience on as an operator and a maintainer on FRA regulated systems. ACI is a member of the operations and maintenance team for the Denver Eagle P3 commuter rail system, serving approximately 20,000 daily riders and operating 191 daily trains. ACI is a member of the operations team for the recently awarded CTrail, intercity service from Springfield, MA to New Haven, CT which will start operating in May 2018. For 11 years, ACI was the local partner in an international consortium that operated and maintained the MBTA commuter rail system, the 5th largest commuter rail system in the country, serving 140,000 daily riders and 479 daily weekday trains.

HDR is playing a key role in the advancement of passenger and freight rail service throughout North America and California, having worked on some of the nation's most complex rail projects including UPRR/BNSF Colton Grade Separations, Denver RTD Eagle P3, UPRR Chicago to St.

Louis HSR project as well as multiple California HSR segments. Based in California, HDR has the right local knowledge and understanding of key stakeholder issues.

HDR has performed 4,000 miles of rail projects in the last 10 years and currently holds on-call contracts or has ongoing projects with nearly every commuter and intercity rail agency in California in addition to long established working relationships with BNSF and UPRR. In addition to their project work with transit agencies such as Caltrain, CCJPA, ACE, TAMC, NCTD, SANDAG, SANBAG, and SMART, HDR has held on-call services contracts with the BNSF and UPRR for over 25 years. Obtaining the necessary reviews, approvals and agreements is one of the most complicated third-party coordination efforts but one that HDR, with its extensive relationships with Class I railroads and transit operators, is well-qualified to assist with.

Their team members have also provided preliminary engineering design services for multiple projects in the California HSR system as well as leading an engineering team responsible for defining the technical criteria specifications and performing preliminary design for all aspects of the Electrification Train Control Communications Vehicle interfaces and SCADA Systems as well as the EMF criteria. They also led the design development for the system elements based on EN Standards and TSI's and the establishment of electrification requirements for the Federal and State Regulations for High Speed Trains and 25kV electrification to provide the regulatory framework for the project. They understand the Authority's design criteria; and have experience working with all of the stakeholders and regulatory agencies.

ii. Approach to General Consulting Service

1. Procurements (Key Deliverable 11)

Our objective is to provide the Authority with our breadth of experience and support to contract optimized products and the most efficient services based on a compliant tendering process that favors robust competition and competitive pricing in order to maximize enterprise value and net revenues of the system.

Rolling Stock dictates the predominant facility interface for the customers. Fleet size and layout of the trainsets will be determined based on ridership and revenue-forecasts and other parameters including travel times, ride comfort, capacity and passenger amenities.

Based on research of the customer-requirements, and the already available facts from the potential suppliers, DB recommends a "contest" by inviting bidders to present their most innovative ideas for access design and interior layout of the trains during the initial phase of the procurement process as an input to the tendering process. At the same time, DB will contribute all of its technical and commercial experience for the negotiation of the best solutions including the rolling stock design (see Section *Rolling Stock fleet size and design and interior layout*) and the decision-process.

An evaluation matrix containing the functional requirements for the rolling stock will be prepared according to the cornerstones of the business-case for the HSR. Human health, environmental quality and sustainability of materials will be considered as part of the matrix and the decision process. Determination review of the rolling stock fleet size for the initial order (16 Trainsets), and subsequent orders, as well as the respective and efficient maintenance scheme for the highest practicable RAMS will form part of our support for the procurement process. Together with the RDP we will specify quality check and assessment regulations for each functional, cost and schedule requirement during design, development and warranty period and for operations and maintenance of the rolling stock. The level of fulfilling these requirements will be part of the

review process: detailed milestones and quality gates will be the means to measure fulfillment of the contract. The payment regime as stipulated with the Term Sheets, shall be linked to these quality gates. The claim-management will also be linked to the level of fulfilling each requirement.

We will also check for possible Incentives to be included in the Tier III Trainset contract to continuously improve the rolling stock over the life cycle in respect of RAMS and costs and to interact with the other systems in respect of a global improvement. This may include the introduction and application of technical innovations via new spare parts and refurbishments to be delivered by the supplier. We expect frequent innovation in the areas of train-IT, data management and relevant on-board passenger services.

The Consultant will also look into different financing methods for the procurement of Rolling Stock. Whereas the Term Sheet for the Tier III Trainsets indicates to procure the Rolling Stock based on a Manufacturing Amount; Maintenance Facility Amount; Service Payment and Trainset Mid-Life Overhaul Amount for each fleet; the ETO will also look into alternative financing methods such as Leasing. Since rolling stock companies will still own the trains after the end of the contracts they may have an incentive to maintain them to a higher standard. On the other hand Leasing contracts usually require huge private investments by banks in order to finance the development and manufacturing period of the trainsets as usually lease fees will be only paid once commercial operation starts. DB can complement any of the favorable solutions through its extensive experience with leasing contracts in the UK franchise market as well as through its role as Rolling Stock owner in Germany.

"Mr. Joachim Mayer was responsible for the procurement of the brand new ICE 4 fleet. In total the supplier will deliver 300 train sets to replace the current IC- and ICE 1&2 fleet"

Term Sheet Tier III Trainsets

Going through the Term Sheets for the Tier III Train Sets and the Track & Systems, we identified major challenges in the proposed timeline and approach (see table below). The Authority intends to give access to the Test Track for the Tier III Trainset manufacturer 48 months after NTP. Furthermore it is stipulated that the manufacturer shall obtain the Certificate of Final Acceptance 72 months after NTP. 24 months after NTP the Authority intends to provide characteristics for the signaling and communication systems for the mainline. Considering that Initial Operations should start as soon as January 2025 and 48 months after NTP the Test Track is accessible to the manufacturer and Testing and Commissioning of the Rolling Stock will take around 24 month; there is only 2 years left for the Rolling Stock manufacturer in order to design and manufacture the on-board equipment for signaling and telecommunications.

Milestones	2018	2019	2020	2021	2022	2023	2024	2025
Start of procurement for Tier III Trainsets	◆							
NTP for Tier III Trainsets		12 months ◆						
Characteristics of Signalling&Communication systems			24 months		◆ design & manufacture			
Access to Test Track 48 Month after NTP			48 months				◆ T&C	
Final Acceptance Fleet 1 72 Month after NTP			72 months					◆ Operation

That bears the risk of system failure and delay for homologation. Furthermore providing those characteristic after NTP will lead to increased risk contingencies included in the Contract Amount because the manufacturer will have to consider unknown technical details at bidding

stage. Obtaining the Certificate of Final Acceptance 72 months after NTP and considering a 12 months period for the tender process also means that the release of the tender for the Rolling Stock has to happen as early as end of 2018. The ETO will make the consultancy for the procurements priority number one and would strive to provide the characteristics of the signaling and communication systems for the mainline as early as possible, ideally already with the bidding documents for the Tier II Trainsets in order to mitigate delay, system failure and high risk contingencies in the contract amount.

DB will also advance the procurement of the Track & Systems. All requirements and designs must be coordinated before contracting as the interface designs of these systems and facilities influence the total costs, the revenue potential and quality of the overall rail business. The major interfaces are wheel-rail for highest riding comfort and low maintenance costs; pantograph-catenary and energy supply for reliable and available performance and low maintenance costs; platforms-vehicles for efficient and comfortable passenger entry and exit as well as for quick provision of catering supplies; signaling-trains for rapid dispatch and line capacity during peak times or disturbance in the traffic flow; harmonized EMC amongst all electric equipment both on track and vehicle side for an absolutely reliable and highly available performance.

One of the challenges facing the project will be implementation of Positive Train Control/Automatic Train Control (PTC/ATC) in a corridor that, while mostly exclusive to HSR, is shared at each end with freight and commuter rail operators who have already adopted different PTC systems such as the Interoperable Electronic Train Management System (I-ETMS) for Southern California's Metrolink and Incremental Train Control System (ITCS) for Caltrain in the Bay Area. As Caltrain also operates on track owned by the Union Pacific Railroad, Caltrain must dual-equip its locomotives with both ITCS and I-ETMS/ITCnet. A key challenge is that neither I-ETMS nor ITCS is yet certified for 220 mile-per-hour train service.

It may be valuable to look to train control systems in Europe, where nearly thirty years of effort has seen the successful integration of high-speed train control systems across country borders. For instance, Thalys trains running between Paris, Brussels, Cologne and Amsterdam have to be equipped with seven (7) different types of train control. DB is unique taking into consideration our combined experience managing services on an integrated network hosting short-headway, high-frequency mixed traffic. As such we are very experienced implementing the European Train Control System (ETCS), the signaling and control component of the European Rail Traffic Management system (ERTMS), which was designed to replace the many incompatible safety systems used by European railways.

DB is aware that in 2016, the Authority acquired exclusive rights to the radio spectrum needed to operate future communications systems for its trains, including PTC as well as radio communication between trains, right-of-way maintenance crews and dispatch centers. The choice of this spectrum bodes well for enabling a unified, coherent approach for the critical wireless communications necessary for safe and successful HSR operations.

Furthermore, DB will use its multifaceted procurement experience to facilitate the various ancillary revenue opportunities for the project. With our experience in commercial station services, including car parking and retail, advertisement and car and bicycle sharing, and real estate development, DB's experience will lead to a maximum project benefit through value-enhancing measures and best purchase conditions.

Main outcomes of those consultancy services will be Key Deliverable 11 (Formal concurrence on procurement process), furthermore they will be substantial to achieve Key Milestones 2 & 3 (Execution of a Rolling Stock contract & Execution of a Track and Systems contract).

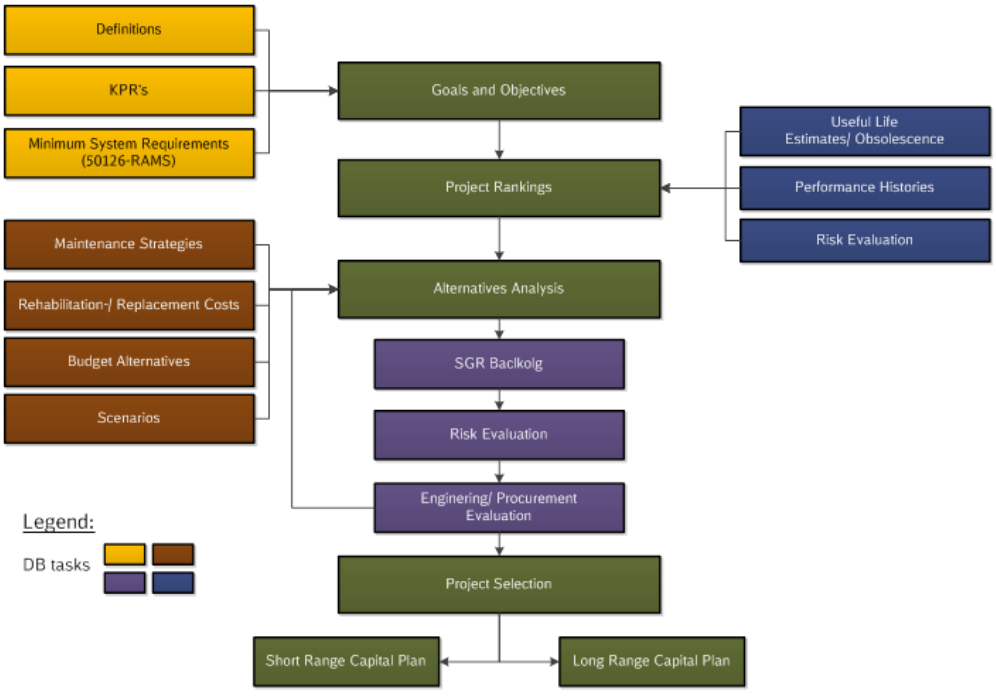
2. Optimization of LCC related to RST and Track & Systems

Our objective is to provide the Authority with an approach (and plan) that ensures that assets are maintained, rehabilitated and replaced by the suppliers on a timetable that is consistent with industry best practices and supported with a well-defined forecast of future capital resource needs. Asset management is a mission-critical activity because deferring maintenance or neglecting to overhaul or replace assets before they fail leads to increased cost and presents unacceptable risks to service reliability, safety and customer satisfaction.

The CHSR system will be made up of numerous complex asset classes with unique maintenance requirements and varying lifespans. It will be the responsibility of suppliers and contractors to maintain those assets consistent with preventive maintenance schedules and to determine when they need to be overhauled or replaced. Part of DB's role during the design phase will be to provide input on material selection, design life and ease of replacement among other factors that will influence long-term maintenance costs.

All assets should be inventoried in line with parent-component relationships and catalogued in a computerized asset management system that contains detailed maintenance data as well as data related to asset condition. A variety of processes and factors can be employed to create a portrait of asset condition-percentage of remaining useful life, performance reliability, and physical signs of wear and tear. Together, these factors can be combined into a rating description (e.g. excellent, adequate, poor) as well as a scoring range (typically zero to five).

Active condition monitoring along with trend analysis can identify precursors to failure and lead to extended component life over sometimes more conservative Original Equipment Manufacturer life cycle age and mileage-based intervals. We will suggest that contracts with suppliers for vehicles, track and systems include automated health monitoring elements (sensors, measuring devices, etc.) for improved assessments of asset condition and ultimately for improved predictive maintenance practices. These data should be shared among maintenance and operating departments for purposes of identifying corrective action and making maintenance as efficient and cost-effective as possible.



DB will advise the Authority on ways to utilize condition assessment results to evaluate risks, perform economic forecasting, and prioritize capital investments. There are a number of models-including USDOT's Transit Economics Requirements Model (TERM)—that can forecast capital investment needs and replacement costs over a long time horizon. Risk assessment entails analysis of investment strategies and

associated implications for service reliability and safety. The figure above presents a schematic of potential steps in the investment prioritization process.

As mentioned above, asset maintenance management software that provides for complete equipment lifecycle management, including serialized component configuration, condition tracking, maintenance management, and asset availability tracking is essential to the process.

DB will work with the Authority to develop an Asset Management Plan (AMP) that complies with ISO 55000, 55001 and 55002. One outcome of the plan will be to maintain an efficient balance between capital and operating costs linked to financial and operating performance.

The outcomes of those Consultancy services are relevant to Procurements (KD 11), Calculation of Operation and Maintenance cost estimates (KD 4), to the Interims Financial Plan (KD 10) and to the Asset Management Plan.

3. Station design and operations

We believe that the station design should recognize that in addition to convenient access to train service, stations can also be a community asset with revenue implications. We will seek to make stations safe, functional, aesthetically pleasing, energy efficient, integrated with the local economy and cost effective. The stations shall also work as an engine for economic growth for the surrounding area.

DB will work in conjunction with the RDP to determine the best possible design for each station. This will require them to be safe, secure, fully accessible, integrated with other transportation services (e.g. rail, bus, taxi, ride-share, bicycle, and eventually self-driven cars), environmentally friendly and revenue producing. DB will assist the Authority in working with the Metropolitan Planning Organizations, other local and state officials and community groups in developing a station area that becomes the central focus of the community. The key stations for ridership will be the Transbay Transit Center (San Francisco), Millbrae Intermodal Terminal, Diridon Station (San Jose), Fresno, Bakersfield, Burbank and Los Angeles Union Station based on the service plan in the 2016 Business Plan. The stations will be comfortable and efficient places for changing transportation modes and can be used as residences, retail centers, office spaces, restaurants or community centers. DB is at the forefront of energy conservation in station design and operation as the Horrem Station demonstrated in Section *Incorporating the Authority's sustainability goals*.

"Since High Speed operations started at the station Montabaur more than 80 companies settled in the proximity of the station and created 1800 new jobs."

The urban area around the station as well as the station itself must be a destination in itself and DB will use its experience, which includes such successful examples such as Hannover, Germany, which is described in the Authority's document: "Urban Design Guidelines, California High-Speed Train Project, March 2011" Page 9 "Hanover's New Front Door". DB will push for mixed use walkable neighborhoods within a 10 minute walk around the stations in order to decrease carbon emissions from last mile transport and increase land value. Even if the land does not belong to the Authority, value capture funding could be implemented around the stations and the project can benefit from the increased land value which the Project will generate as explained in the Authority's document "HST Station Area Development: General Principals And Guidelines, February 3, 2011".

There are three key considerations that will influence the size and scope of the station: (1) anticipated ridership; (2) surrounding environment; and (3) type(s) and scale of feeder

transportation. These will help to determine many of the functional requirements of the station such as walkway widths, quantity of elevators/escalators, number and type of retail options, and the scale of the connecting transportation facilities.

Station planning will start with a detailed review of the conceptual architectural station plans and surrounding area. Ridership and feeder transportation forecasts will develop into pedestrian flow analyses, and ultimately pedestrian and vehicle flow requirements. In conjunction with the station design, the operational concepts for the particular stations (passenger services, boarding/alighting and dispatching of trains, information, control management, ticket sales and validating, cleaning, etc.) will be prepared. All stations will be designed with input from local and state emergency services to ensure safety and security of all users.

Typical deliverables can include: advise on track layout; functional requirements, the designated architecture to connect the travel modes, retail concepts pointing out tailored compositions of store types and scales, operational requirements for the leaseholders and estimated leasing fees, design reports describing and illustrating the structural and operational design basics, their considerations, calculations and assumptions and the design process including discussions and evaluations of alternatives. Specific deliverables will include the **station operating plans.**

4. Rolling Stock fleet size and design and interior layout

Our objective is to determine the optimal fleet size to efficiently and economically meet service requirements with rolling stock that fulfills all customer expectations, provides first-rate passenger accommodations, complies with all regulatory requirements and achieves strict reliability, availability, maintainability and safety (RAMS) requirements.

Fleet size is determined by considering many factors, including ridership projections, time tables, depot locations, distances travelled, and operations plans. This data drives the number, size and makeup of trainsets that will be required to meet the availability requirements for revenue service including special events. We will build upon the extensive analysis already performed by the Authority in the 2016 Business Plan and other reference documents and will refine assumptions, estimates and forecasts as plans mature to develop comprehensive service plans on which to base fleet size recommendations.

In addition to revenue service requirements, FRA compliant rolling stock maintenance plans will be required to be provided by the rolling stock provider. These maintenance plans shall achieve the RAMS requirements with efficient and economical spare ratios to account for time out of service for maintenance and repairs. The approach for determining fleet size will be executed by blending operational availability and reliability requirements with maintenance out of service requirements to be discussed as part of the procurement process.

Design and interior layout of trains will comply with all Federal and State regulations including passenger equipment safety standards and crashworthiness criteria required by the FRA for Tier III high speed trains. DB's experience here will be very helpful because FRA has concluded that there are no significant differences between trains built to standards in Euronorms and requirements in the proposed Tier III rules.

DB will work to ensure that the tender for rolling stock design places great emphasis on RAMS of all onboard equipment, the unique rolling terrain, and interfaces with infrastructure and systems. The design of the equipment will be evaluated to assure efficient functionality consistent with operational plans. Accommodations will be recommended based on safety, accessibility, durability and maintainability, and while there may be different types and levels

such as business class, coach and dining cars, a high level of comfort will be expected throughout the train set.

Important aspects for the layout of the trains are number of seats per train car, entry and exit facilities in respect to comfort and time, flow throughout the train set, accessibility of wheelchair areas, passenger storage, seat reservations and capacity management, passenger guidance, passenger information system, WiFi, location and design of bathrooms and equipment, layout and design of air conditioning, additional first-class amenities, luggage service, lighting, color and design of the interior, on-board services such as catering (dining car availability / design) and entertainment.

We will engage the public in order to better understand customer expectations and will work closely with the manufacturer to assure that the focus of interior design includes a positive passenger experience and operational functionality.

Deliverables will include recommendations for optimal rolling stock design fleet size for the initial order and any subsequent along with a rolling stock design that meets all regulatory and RAMS requirements and provides top quality passenger accommodations.

5. Fare integration and inter-operability (Key Deliverable 6)

DB will play an active role in helping the Authority to achieve its goal to create seamless fare and schedule connectivity between HSR and the multitude of intercity, commuter rail and urban train services that make up California's complex rail network. We understand that the combination of multiple fare payments and long waits at transfer points makes a journey by car more appealing.

Interoperability also means coordinated routes and schedules on the alignment in territory shared with other train operating companies when HSR launches as well as in the future. The goal should be to accommodate as much convenient service for the riding public as possible by working to avoid conflicts in the schedule and accepting as many routes as possible between Los Angeles and San Francisco.

CHSR will intersect with Caltrain, Metrolink, Altamont Commuter Express; Capital Corridor, San Joaquins and Pacific Surfliner intercity rail services, Coast Starlight, California Zephyr, Southwest Chief, Texas Eagle, Sunset Limited, BART, Muni Metro, VTA, Metrolink and others. We expect the main hubs for connecting rail services will be San Francisco, Milbrae, San Jose, Fresno, Burbank and Los Angeles.

"We are coordinating the integrated schedule for approximately 380 TOC's in Germany! In addition we coordinate with all regional transit authorities in order to achieve integrated schedules, passenger information and unified tariffs."

DB's objective will be to enhance ridership and revenue by helping the Authority to establish fare and service linkages with these services. Harmonizing schedules will require active engagement with multiple organizations with a combination of technical skills, creativity and diplomacy. DB has significant experience working with multiple service providers to craft a regional approach to service and fare integration based on coordinated planning and interagency cooperation.

We are aware that a coordinated planning effort to develop an integrated passenger rail system is actively underway. The Capitol Corridor has a grant to identify key policy and technology linkages to make ticketing integration work. The study findings will be presented to the California

State Transportation Agency (CalSTA) this fall. A key recommendation will likely be to perform a gap analysis comparing "ideal systems" from Europe to California. Moreover, the FRA has made this type of coordinated planning a requirement under its state rail planning guidelines and indicated that future federal funding will be linked to it.

Alignment of service schedules will likely begin by first trying to integrate HSR with existing timetables of other services; then, where there is a significant ridership benefit, explore the feasibility of schedule changes on other services. A more integrated fare structure could entail pricing incentives, through-ticketing, bundled services and convenient payment options.

Our approach will also focus on station designs that promote transfer convenience; timetables that harmonize as much as possible with connecting services; one-stop integrated ticketing and account settlement, and accessible schedule and real-time service information that helps customers make informed decisions about transfer options.

We will also look at the potential for autonomous vehicles to provide passenger circulation around the larger station area developments such as Diridon Station to connect businesses, hotels and residential areas. Such vehicles are currently being tested at Bishop Ranch in Alameda County.

DB will concentrate on walkability and mixed use development in order to connect stations with their surroundings in a pedestrian friendly way.

DB will investigate revenue generation opportunities related to professional sport venues and tourism destinations such as Yosemite National Park, Monterey Bay, Napa, and. One example of might be to partner with a coachline or Yosemite Area Regional Transportation System and Aramark (the park's concessionaire) to provide exclusive vacation packages similar to the excursion passenger services offered by the Alaskan Railroad.

Parking is also important for connectivity but should be managed carefully as too much parking in an urban setting attracts more car traffic and reduces the walkability of the station area. Limiting surface parking to passenger pick up and kiss and ride and directing vehicles to parking structures with retail potential is one model to consider.

Linking separate passenger rail systems is always a challenge due to political boundaries, how the services are funded and the ways providers define their missions. Public policy, regional partnerships and local champions of seamless travel will be the key to success for this undertaking. It can work if the barriers to using more than one transit service are effectively negated. DB understands that convenience counts!

In cooperation with the Authority and the RDP, we will develop **Key Deliverable 6 – Integration Plan for state wide rail services**, a comprehensive plan for service and fare integration among multiple transit providers and associated forecast for impact on ridership growth.

6. Security and safety arrangements (Key Deliverable 8)

DB is committed first and foremost to the safety of passengers, the workforce and the general public. For our company, "safety first" means no compromises or shortcuts in the face of competing demands. It also means that all employees have a duty to take reasonable care for their own health and safety, and the right to report unsafe activities or conditions.

Our overall safety approach will focus on awareness, preparedness and performance. DB will address during the First Phase how risk management, environmental design, technology, public

education and enforcement can promote safety. In developing safety plans and procedures, DB will look to establish an open and cooperative relationship with the FRA and to participate in the FRA's Railroad Safety Advisory Council (RSAC).

DB's safety plan will adopt the FRA's safety regulation requirements (49 CFR Part 270), including the 20 core elements. Key elements of the safety plan will include program goals, implementation process, rules compliance and procedure review, training, emergency management, work place safety, risk-based hazard analysis, safety culture and program assessment. Work place safety will include fatigue management and medical monitoring, fitness for duty, hours of service and control of alcohol and drug use.

In order to track the safety related requirements of the FRA, DB will create and regularly update a "New Start Worksheet" listing FRA disciplines, identifying the DB person who is responsible and signifying the status of each item.

DB will incorporate our Integrated Management System, including Safety Management System (SMS) principles, where relevant. Under European Union regulations, SMS is mandatory for railway transport and infrastructure companies. DB's SMS has been approved by Germany's National Safety Regulator (NSA). Other important touchstones will be FRA safety advisories and emergency orders; FAST ACT (Section 3020) requirements; California Public Utilities Commission, National Transportation Safety Board and American Public Transportation Association standards, as well as federal Occupational Health and Safety regulations. Regarding security procedures, DB will develop awareness and response procedures based on threat and vulnerability assessments. Employees will be prepared to respond effectively to a variety of hazards, including bomb threats, criminal behavior, fire and smoke conditions, natural disasters, explosions, and power outages. Cyber security risks including compromised personal and operational safety, financial integrity and personal privacy, will be evaluated and steps will be taken to prevent, detect, respond and recover. For additional detail on how DB will implement safety and security plans and procedures, see Section *Implementation of a Safety and Security Plan* .

Specific deliverable of those consultancy services will be the **Key Deliverable 8 – Safety Plan**. The Safety Plan will be further used in order to do provide services for System safety planning and management and system security coordination during the Operations Period.

7. Operations control systems including dispatching responsibilities

Location of OCC

The Operations Control Center (OCC) plays a pivotal role in ensuring the safe, on-time performance of train service. It is the central point of contact with train crews during both normal and abnormal operating conditions. Dispatchers must have knowledge of operating rules, service schedules, standard operating procedures and train control system functions for the network. They are responsible for responding quickly and effectively to service disruptions and for marshalling emergency response resources (e.g. police, fire, ambulance, etc.) when needed. Maintenance of reports and records is also an OCC function.

Coordination and communication with multiple parties is a core function of the OCC. These parties include HSR train crews, HSR maintenance crews working on or along the right-of-way, third-party contractors, Authority's personnel and other train dispatch centers in shared territory such as the Caltrain and Metrolink corridors. Electronic monitoring of train operations provides considerable flexibility in selecting the location of the OCC. Trains can be dispatched anywhere

along the alignment or even off the alignment as is the case in many systems. However, the Authority should consider several factors in deciding where to position the OCC, including:

- Potential co-location with administration and vehicle maintenance and maintenance of way activities
- Workforce accessibility
- Cost, including communications infrastructure
- How the OCC functions will be affected by other critical decisions, including track and systems procurements

Technical interoperability must be ensured by specifications and contracts with suppliers and maintainers for signaling, communication and power supply systems in conjunction with rolling stock and stations.

Approach to interfacing with dispatching provided by others

The Authority intends to give the dispatching authority for the dedicated HSR sections to the Infrastructure Manager (Track & Systems Contractor) whereas on other segments of the HSR network others will have the dispatching authority.

To determine the dispatching responsibilities and hand-over procedures, a clear breakdown of who is the infrastructure owner and who is the railway operator on which section has to be made. From this borders of responsibilities have to be defined and hand over procedures from one operator to the other established and described. This ideally leads to contractual agreements between the different service providers and authorities.

Deliverables include a proposal for the preferred location of the OCC and backup control centers. The borders to the different infrastructure operators are defined and technical systems interfaces are described. Dispatching and hand over procedures are described and contractual agreements are developed and implemented.

8. Service planning and scheduling

DB will support the construction of an integrated timetable with easy to remember departure times (clock pattern) based on line capacity, passenger demand, and Authority operating requirements. We will use the already prepared *Service Planning Methodology* and further refine it based on the updated ridership data (see *Ridership and passenger revenue forecasting (Key Deliverable 2)).*

Demand data (origin-destination-matrix), planned and existing transportation hubs with time nodes and other requirements will be analyzed and the line concept, service pattern, operating times and headways will be defined. A network map will be developed that includes number of trains on the different routes and train capacity. In parallel, interfaces to other rail operators will be analyzed and stakeholders defined. A common timetabling process for all involved railway operator companies will be established supported by contractual agreements. A preferred option for timetabling software will also be defined, fitting in the overall IT landscape.

Service planning is based on passenger demand, capacity, and minimum Authority's operating requirements. Service planning defines the line concept with optimized availability and accessibility (network, including feeder buses), stopping patterns (local, express, limited stop service), operating times (first train, last train) and headways (peak / off peak / evening service).

The timetable must integrate with the entire rail network and with effective connections within the network (including feeder buses) as well to and from other transport providers with short transfer times. Constraints will arise where infrastructure of other rail companies is used (mixed use), and a common timetable process will be established with regard of the other train services (freight, commuter, passenger).

Contractual agreements with other infrastructure and train operating companies should be made if possible to ensure free network access and give priority to high speed trains. Timetables are not only published information of running times for trains; they are also the basis for further operation planning, such as turnaround planning, vehicle circulation / stabling planning and roster planning for operation staff (train crew, dispatcher, station staff).

The timetable process takes into account the infrastructure data (distances, maximum speeds, gradients, schematic track maps) and rolling stock data (maximum speed, dwell times, acceleration, and deceleration) for the running time calculation. Several timetable options will be developed and coordinated with the stakeholders and the Authority. Timetable calculation and coordination are every day work of DB in Germany for high-speed, intercity, regional, suburban and freight trains, as well as bus services. Time nodes and clock pattern ensure best connectivity within the system and toward other transport providers, such as subway, light rail, and bus services.

Typical deliverables include service structures for the different project phases/milestones as well as recommendations for a preferred software tool for timetabling. Interfaces to other rail operators with direct impact (mixed traffic) and connecting services can be described and stakeholders listed. The results will also be used for the update of the Business Plan.

9. Opportunities to maximize System revenues (Key Deliverable 3)

DB will review, identify, evaluate and forecast a breadth of one-time and continuous income streams, such as but not limited to; real estate development (especially Transit Oriented Development (TOD)), land value capture, lease of right of way, vertical or longitudinal telecommunications, parking, advertising, sponsorships, naming rights, renewable energy systems, district infrastructure, and on-train passenger revenues such as selling snacks or access to entertainment systems.

DB will review, identify, evaluate and forecast the direct (e.g. income from parking) and indirect (e.g. increased passenger numbers due to parking) revenue. Once revenue sources have been identified, DB will provide input and develop strategies to capture these incomes.

DB will look to increase the attractiveness of stations to commuters, especially those working in Silicon Valley. DB will build on its experience of the positive impact of HSR on city populations such as on the town of Montabaur (Germany) where, since the station opened, its population has grown by 4% compared to a 2% drop of population in the wider county over the same time period. DB actively contributed to the attractiveness of these cities to commuters by increasing service frequency in the morning and evening peaks to both Frankfurt and Cologne.

Madera and Gilroy have similar attributes as Montabaur with regards to station location, city size and travel time to a major employment centers. DB will assess the potential commuter demand from these stations and how to further increase the number of passengers. Through our experience of real estate development next to stations, we will help to increase off peak demand.

DB will investigate the possible income from rental and leasing of station space. DB has strong experience in this sector, in Germany DB raised $229 million (€194 million) from rental and leasing of station space to shops and lockers in 2016 which was equivalent to about 9% of the total high speed ticket revenue.

DB will review the HSR concept (especially station and vehicle concepts including dining cars) to define potential options for advertising sites or other sponsorship services such as naming rights and will then develop guidelines for the content of such advertising services to ensure their harmonization with the HSR brand and marketing concept (see Section *Marketing and branding strategy for the system (Key Deliverable 9)*). This guideline will include a pricing strategy, which will be based on international best practices for the leasing of advertising services in rail. DB is one of the biggest providers of advertising space in Germany which spans across 5,000 stations and 24,000 trains per day.

"DB also creates ancillary revenue through cycle hire, fleet solutions, car sharing, chauffeur service and other integrated mobility services."

Additional income from assets which DB already has experience in, range from the installation of wind turbines at stations, mixed use ticket offices combined with tourist information centers to the installation of refrigerated lockers to pick up groceries ordered online.

Customer service is an iterative process and through regular customer surveys DB will react to passenger needs and wishes which may also discover services which passengers are willing to pay for.

Main Deliverable will be Key Deliverable 3 - Ancillary revenue scenario analysis and analysis of the associated impact on the Financial Plan.

10. Ridership and passenger revenue forecasting (Key Deliverable 2)

Our approach will commence with a detailed review of the relevant ridership and passenger revenue forecasts that have been published since 2005. An integrated demand model has been developed and evaluated by notable institutions.

Our opinion is that more work needs to be done in order to establish a more definitive forecast. For one thing, ridership estimates vary widely due to forecasters considering different assumptions such as demographic and economic developments, behavior of the public, traffic participants and infrastructure projects within the investigation area.

We believe there is an opportunity to establish a more definitive forecast once agreements with other transport service providers with regards to integration and connectivity have been made. We will also work with modern data-analytics tools such as modalyzer (see Section *Innovations*) in order to incorporate real time data into the model.

Due to the volume of work already performed related to the ridership demand forecast it is not proposed to start from the beginning and develop a new travel demand model. We propose to adjust and use the existing. Additional surveys such as censuses and interviews are also not thought to be conducive to reaching more reliable and agreeable numbers. In our opinion, the best approach corresponds to building on the available, already developed, database and pulling in the needed relevant information.

This includes making adjustments on the basis of previously captured findings concerning demographic, economic and geographic/infrastructural characteristics and their derived elasticity parameters such as trip durations and travel costs.

This approach enables the comprehension and finally adoption into our own system of the existing traffic demand model and the transmission of its essential results.

After agreeing on three realistic demand scenarios (minimum, medium, maximum) in addition to the comparison of "No Build" and "Build" transport relation matrices can be derived and processed based on the defined HSR stops. The assignment of these matrices, which refer to determined demand scenarios as well as to optional selected timeframes (e. g. yearly, daily, hourly), enables the calculation and illustration of the predicted passenger loads of particular railway sections (between successive stops such as Palmdale and Bakersfield for example).

The resultant deliverable will be a reasonable calculation of the passenger revenues on the basis of the assigned fare policy and fare structure for any project stage, forecast horizon, and scenario of traffic demand.

Our methodology, calculations and results, in particular the model specification documentation, will be provided in a comprehensive report **(Key Deliverable 2)** that includes written descriptions, tables and figures. The report will also be used in order to conduct the service planning and scheduling for the system and to develop the **Key Deliverable 11** (*Interim Financial Plan*).

11. O&M cost forecasting (Key Deliverable 4)

Our objective will be to accurately forecast operation and maintenance costs and to harmonize the supplier contracts in an efficient and effective manner. DB will utilize a robust Operation and Maintenance cost model based on our extensive experience in operations, maintenance and construction. The model will have the capability to perform analysis based on varying inputs to determine the best possible solutions. Our many decades of experience of building and maintaining slab track have shown that maintenance costs can be lower if slab track is constructed and maintained correctly. Especially important is the quality of the earthworks to keep the maintenance costs of slab track low. We understand the interaction between the different parts of a railway and how they impact the maintenance costs of the whole system. The main cost drivers will be labor, rolling stock maintenance and right of way maintenance. We will propose utilizing a data driven monitoring and inspection maintenance plan to reduce maintenance cost by discovering and correcting minor problems before they become significant problems. This process has been utilized effectively by us on rolling stock, switch machines, and track and we will continue expanding this process to other areas as practical.

Our approach will compare the existing Operations and Maintenance Cost Model Documentation with historical data from our operations specifically in the areas of mixed high speed and regional traffic. DB's data will be adjusted to California labor and materials prices to present a fair comparison. DB will gather financial, operational and business data and to determine the expected beneficial effects and business objectives. For estimation purposes, operating and maintenance costs can be disaggregated into major cost items as follows:

Cost Item	Description	Activities
1. Ramp-up Phase	Mobilization activities.	▪ System demonstration testing ▪ MMIS implementation

		▪ Personnel hiring and training	
2. Customer Services, Stations and Terminals	All activities related to ticket sales, passenger information, fare collection, station security, and platform cleaning.	▪ Security ▪ Station cleaning ▪ Fare Collection ▪ Marketing / Advertising ▪ Energy for stations	
3. Train operation	Personnel directly involved in train movements both revenue and non-revenue service.	▪ Train crews ▪ Operations Control Center ▪ Energy costs for the movement of trains ▪ Rulebooks	
4. Right of Way Maintenance	Personnel, materials and work requirements related to inspections, servicing and maintenance.	▪ Infrastructure ▪ Track ▪ Catenary and Power Supply ▪ Signal and Communications	
5. Maintenance of Rolling Stock	Personnel, material and equipment required to maintain trains based on the maintenance plan.	▪ Materials ▪ Shop equipment ▪ Vehicle cleaning	
6. Maintenance of Stations, Shops and Buildings	Personnel, material, equipment, sub-contractors to maintain the stations, shops and other buildings.	▪ Janitorial services ▪ HVAC/Plumbing ▪ Electrical ▪ Other station systems	
7. Other	All other costs not included above.	▪ General administration ▪ Human Resources	▪ Labor Relations ▪ Safety

Deliverables will include **Key Deliverable 4** and input to *Interim Financial Plan (Key Deliverable 11)* and Second Phase Financial Plan. Additional detail is included in our Approach to the Interim Financial Plan.

12. Contractor required insurances and interface with other insurances

We will support the Authority in order to develop an insurance concept for the Early Train Operator, the Rolling Stock and Track & Systems contracts. We will analyze existing insurance concepts together with the Authorities Insurance Broker, draw up an interface matrix and define necessary coverage. In addition we will utilize DB Assurance and its associates in the US to find the right solution for each of the contractors.

13. Preferred revenue collection systems (Key Deliverable 5)

DB will evaluate revenue collection systems and make a recommendation to the Authority for one that provides pricing flexibility, secure revenues, equipment reliability and durability, and seamless fare integration with other regional transit providers. The recommendation will include application of innovative technologies to provide both customer convenience and efficient ticketing and fare collection.

Our starting point for selecting an optimal revenue collection system will be to understand Authority and regional strategic goals. In addition to the goals of better serving riders and enhancing revenue, DB will pay close attention to the Authority's stated mission to improve regional and interregional connectivity in part through "seamless" transport access and payment across agencies and modes. Other system objectives will include pricing flexibility, increased pre-payment, revenue control and accountability, equipment reliability, cost and ridership. DB will also evaluate system capabilities to adapt to new fare media, such as contactless smart cards, bank cards, mobiles and other devices.

With regard to regional interoperability, DB will look at several organizational models, including lead transit agency with regional partners, a joint coordinating interagency committee, or an entirely new entity to manage payment for travel among multiple transit systems. We will also consider the advantages/disadvantages of:

- Proprietary systems versus standards-based payment systems
- Card-based systems versus "account-based" architecture
- Closed payment fare cards versus open payment architecture

Clearly, mobile phones and contactless bank cards with secure microprocessor chips present an important business opportunity by leveraging the technology capabilities of devices that are used by upwards of three-quarters of the US population. DB will strongly support the development of a "virtual ticket" solution. The ability to use the same device to deliver schedule and route information and to also access the system will provide powerful synergy to the customer, similar to DB's Navigator, which is DB´s mobility and ticketing app for its own network (most popular travel app in Germany).

The CHSR system will benefit from our extensive technical knowledge and experience, including development of a "Be in/Be out" solution, which will combine automatic revenue collection, ticketless travelling and minimal effort for ticket inspection through automatic detection of the customer onboard the trains. Working closely with the Authority, DB will develop a revenue collection concept and recommend a system that will meet the latest version of ticketing safety standards of the CIT and UIC while also serving the goal of promoting regional mobility through inter-operability.

Outcome of this task will be the Key Deliverable 5 – Analysis and report on preferred revenue collection system.

"DB is running a trial that involves around 60 passengers testing hands-free ticketing between five stations in the Chiltern Railways network. A new app tracks the passengers' movements and then charges them the cheapest price for their journey.

14. Marketing and branding strategy for the system (Key Deliverable 9)

Branding and marketing the new CHSR system is an essential early element for its success. It sets the stage by building excitement, anticipation, interest, and intent to try. Positive branding will help define and convey the experience of travelling by HSR – imbuing the future experience with positive emotion. It will be designed based on research to simply and clearly communicate the emotional and practical benefits of HSR travel across California, capturing the imaginations of our target audiences, stakeholders and potential sponsors, and establishing California as the leader in innovative transportation across the US.

DB will begin by creating a Marketing and Branding Plan to provide the Authority detailed strategies for creating a positive, memorable brand identity and recommended marketing strategies and tactics to launch the brand for the new system. Marketing will concentrate

strategically on the factors most likely to build interest and anticipation and to convince the public to change longstanding travel habits. We believe that the right mix of marketing messages and well as dynamic pricing incentives and sales options will be effective in attracting customers for this new service.

DB's early approach is to subcontract with an accomplished California-based marketing firm and conduct market research to help identify the most effective messaging and visuals as we create a world-class brand identity for HSR. We will define the key elements for the brand in close cooperation with the Authority, including an inspiring product name that triggers positive emotions, is related to local roots, and resonates with different cultures across California. This product name will be enhanced by an eye-catching brand logo and an innovative design to communicate the brand identity, and will be applied to all forms of communication. We will test a variety of options among target audiences to ensure creation of a truly inspiring brand. Trademark protection will make the name and design unique in the world. DB has successfully developed and implemented many well-known brands both inside and outside Germany that are considered innovative. Our most recent experiences were state-of-the-art marketing campaigns during the launch of DB´s ICE 4 and the launch of a new public transport network in the province of Limburg in the Netherlands through DB in 2016.

DB will develop for the Authority aggressive marketing and public information campaigns to build interest and educate people about CHSR. They will include fully integrated media strategies that reach individual audience segments through paid, earned and social media with targeted messages that resonate with their lifestyle, interests and needs. Aspirational messaging will build intent to ride while educating about “nuts and bolts” issues such as parking at stations, connecting services, fares, how to purchase tickets and train schedules. Marketing will also promote key benefits of the new service, including travel time, personal productivity, competitive fares and state-of-the-art booking solutions. One tactic to build excitement and customer acceptance will be to create opportunities for the public to weigh in on certain decisions such as interior design of the rolling stock. The program will ensure that the timing of marketing campaigns will be fully aligned with the operational launch schedule and progress.

For the phase after the official launch, DB will assist the Authority in defining requirements and overall guidelines for the franchise contractor´s daily marketing activities, which will go beyond classic advertising of fare-types or special discounts.

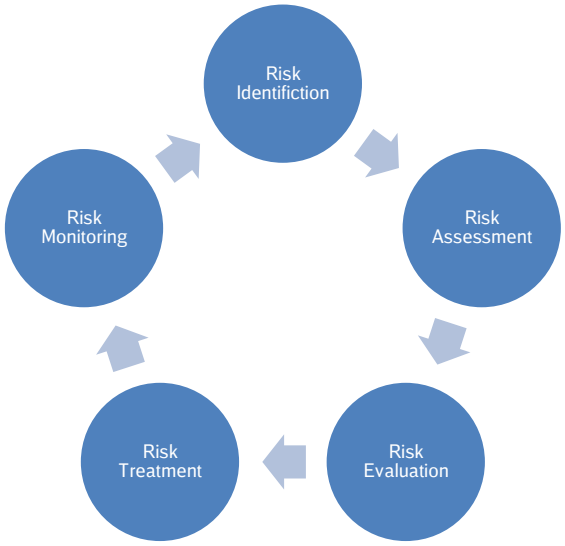
The Deliverable will be **Key Deliverable 9 - Marketing and Branding Strategy for the System**. The results will also support the *Interim Financial Plan (Key Deliverable 11)*.

15. Risk management

Our objective is to develop a common understanding of risk across multiple functions and organizational units in order to manage risk cost-effectively on a program-wide basis, develop safeguards against system failures and support cost savings. Risk management will be aligned with the Program Risk Management Plan of the Authority and will be further detailed in the Risk Register.

The risk identification will be a common and continuously effort for the project team and project stakeholders. Newly raised risks will be integrated into the risk register during risk reviews which will take place on a regular basis, e.g. once a month, and will be organized by the Risk Manager. Besides the regular risk reviews, the Contractors’ Progress Report, the Health and Safety, Security & Environment Report, QA Report and the Site Supervision Reports represent sources of risk identification.

After the identification, the risk will be assessed in terms of qualitative and quantitative impact on the project scope. The ETO will drive this assessment and get support by the relevant project team member who is assigned as the risk owner.



After the risk assessment we will further evaluate the assessed risks and prioritize in terms of risk acceptance. In the next step Risk Treatment, we will develop actions to transfer, eliminate or mitigate the risk in order to minimize impact on the project success.

Risk monitoring is a super ordinated activity, which manages controlling of risk management activities. It is a permanent, continuous activity to oversee the status and effectiveness of mitigation measures and takes place in the framework of risk management reviews. Typical deliverables will be update of the risk register and all steps as described above for risks relevant to the Operation of the System.

16. Provision of other Services

Although the Authority has not specifically asked for ETO input on this topic, DB recognizes the importance of location, layout and access into and out of the maintenance and storage facility. The appropriate number of bays, placement of maintenance support functions inside the facility, location of the carwash, train storage capacity, energy consumption and track configuration to maximize efficient movement of vehicles within the yard and onto the main line critical factors that go into the design process for a maintenance facility. Selection of the vehicle and location of other activities (e.g. OCC) are other determining factors in considering design requirements.

Another important consideration not specifically called out in the First Phase consulting scope of work is track layout, including location of turnouts, crossovers and tail tracks, because track layout will have a major impact on long-term operational efficiency.

If requested by the Authority, DB would be pleased to provide consulting services on both maintenance facility and track design from the perspective of operational efficiency and cost.

DB is also interested in engaging with the Authority on how best to link responsibility for dispatch, train operations, right-of-way maintenance (track, signals, power), and vehicle maintenance. There is a strong inter-relationship among all of these functions. DB understands that the current plan is to assign to the infrastructure maintainer the responsibility for dispatching trains. There may be benefits to linking dispatch with train operations as is typically the case in the US. An exercise to compare advantages and disadvantages of both dispatch models may be worthwhile. In any event, since at least three different entities will be responsible for train operations, dispatch, and maintenance, considerable attention will need to be paid to clarity of interface responsibilities.

Finally, DB is interested in surveying the level of customer interest in additional services at stations and onboard trains that would add value for the public and increase revenue. This could include shopping, food adventures, rolling office and even admittedly far-fetched ideas such as

preventive medical examinations, wellness and fitness, training courses, cinema, or hair dressing. Free time is valuable and taking the train increases it.

B. Second Phase: Establishment of the Train Operating Company (TOC)

i. Introduction

To meet budget, time and quality requirements all preparation activities need to be planned and executed in a very efficient manner. Efficiency is always a result from expertise and experience. DB is very experienced in all relevant commercial and technical areas. Our long distance business unit is not subsidized and has proven over years how to run the high-speed business efficient and profitable.

As described in the First Phase Mobilization Plan, DB and ACI are well experienced in establishing and preparing TOC's for Initial Operations all over the world and have extensive knowledge in the US market, which translates directly to the CHSR Mobilization. Based on DB's worldwide experience the Pre-Operations Period should start at least two years prior to initial operations. It takes time to attract, train and link people and processes together.

The common experience will help to reduce time and costs of establishment of the TOC and to secure the start of initial operations in 2025. Especially lead times for time consuming and complex activities need to be considered. It takes time to attract, train and link people and processes together. From Day 1 of Initial Operations the TOC must be prepared, work customer oriented and very professional to generate positive customer and media perception.

ii. Pre-Operations Period

The Pre-Operations Period is the period of the Franchise Agreement during which the ETO will establish the TOC and undertake pre-operations activities related to System start-up. The services during this period are described herein after in a chronological order of necessary tasks for the successful establishment and mobilization of the TOC. All services will be addressed, beginning with early mobilization up to and including commercial readiness activities such as testing and commissioning of tracks and rolling stock; procurement of fare box and revenue collection systems; marketing and branding or the establishment of various funds and accounts required for the collection and payment of system revenues.

1. Mobilization Plan & Establishment of Core Functions of the TOC

Second Phase Mobilization Plan (Key Deliverable 7)

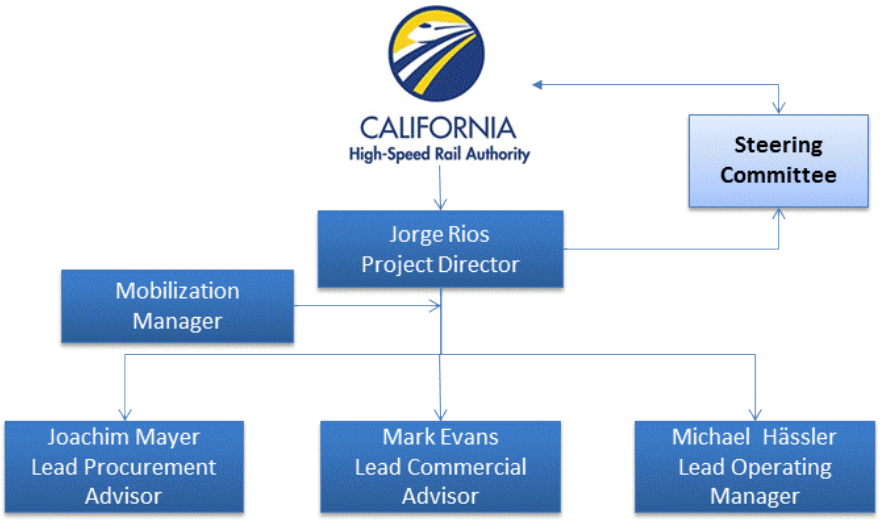
As a key element of the discussion and negotiations of the Franchise Agreement, DB will provide a Mobilization Plan for pre-operations and operations phases of the work **(Key Deliverable 7)**. The mobilization of the Train Operations Company (TOC) starts with staffing the activities associated with meeting the "Conditions Precedent" of the Franchise Agreement. DB will provide a mobilization plan sufficient to support the precedent conditions, including:

- Establishment of the single purpose entity – Train Operating Company
- "Rail Carrier" certification
- Mobilization of the team responsible for oversight and management of the Delivery and testing of a specified number of High Speed Trains (T&C Team)
- Substantial completion and performance testing of the High Speed Test Track
- Hiring and training of sufficient staff to support operational ramp up requirements

Single Purpose Entity

DB will establish the TOC as a single purpose entity for the sole purpose of the operation and maintenance of the CHSR in accordance with the Franchise Agreement. The TOC will be incorporated and headquartered in California and will be authorized to do business in California. DB will ensure that the corporate organizational documents of the TOC will contain "single purpose entity" covenants and provisions customary and standard for large-scale rail infrastructure projects. DB will obtain certification as an employer under the Railroad Retirement Act. If DB is granted the right to develop ancillary real estate projects at or adjacent to the high-speed rail stations, we will establish an affiliate company that will satisfy lender/rating agency "bankruptcy remoteness" requirements.

Mobilization and Integration Management Team (MIMT)



We will establish a MIMT which, in partnership with managers from the Authority and from vehicle and systems maintenance providers, will manage Second Phase mobilization activities. This will provide each department with the opportunity to coordinate their plans and activities and to share information, schedules and resources as needed to provide for the safe and reliable integration of systems and ensure operational readiness on-schedule and within budget. The MIMT is the first of many opportunities for Operations and Station Maintenance, Vehicle Maintenance, ROW Maintenance and Systems Maintenance to work together – DB proposes to continue the partner meetings with the Authority and the technical departments, as well as the weekly technical integrated working group meetings that we initiated during First Phase of the project. These meetings will support timely identification and resolution of technical matters that considers system wide impacts.

Mobilization Activities

Our approach to mobilization reflects our experience successfully mobilizing HSR systems around the world as well as P3 and DBOM systems here in the US; presents a timely ramp-up of staff to support vehicle and systems testing, commissioning, and acceptance, and to ensure operational readiness; and assumes regular and close coordination the Authority, Vehicle, ROW and Systems maintenance, as well as, stakeholders throughout the corridor. We anticipate completing the Phase 2 Mobilization within two years.

The exact dates for specific mobilization tasks to be carried out in each of the stages will be determined according to the Testing and Commissioning and Final Acceptance schedules prepared by the Contractors. As the construction, integration and testing activities approach completion, DB will alter this sequence as needed in order to prepare operations staff for their eventual functions. The MIMT, in coordination with testing and commissioning activities, will

monitor completion of items on the schedule and make changes or adjustments as required to meet the needs of the system. In preparation for Revenue Service, all systems must be tested, commissioned and accepted. Revenue Service must be simulated to assure that all HSR equipment, facilities, procedures and personnel function in concert to provide safe, secure and on-time HSR services that is safe, reliable and meets customer expectations. DB's approach to systems testing is described in Section Testing and Commissioning.

Staffing Ramp-up

DB will provide personnel of sufficient number, appropriate experience and technical expertise and qualifications to provide these required services to or for the benefit of the Authority. In preparation for Revenue Service, DB will support the Authority and the Vehicle, ROW and Systems maintenance contractors to ensure that all systems and vehicles are tested, commissioned, and accepted. DB will support a full system demonstration test and revenue simulation to assure that all equipment, facilities, procedures and personnel function in concert to provide safe and secure on time transportation services that ensure customer satisfaction. In the months prior to Vehicle Commissioning, DB will hire the remainder of our key staff and managers, Instructors, Supervisors and Line Controllers. During the early stages of Vehicle Commissioning, we will support start-up activities with supervisory candidates – all will complete the training program for train crews, and will gain practical, hands-on experience during this period.

During Systems Testing we will hire additional Supervisors in Operations, Quality, Safety and Security; Crew Dispatchers; Line Controllers and all train crews. The Train Engineers, Conductors, and Supervisors will be hired and trained in groups of eight with the first class starting the last year of First Phase. Trainees for non-technical positions can be trained in groups of 16. The duration of the training program varies by job classification. DB has the capacity to run training classes concurrently; ensuring candidates can complete the specific training program prior to pre-revenue service.

In the months prior to Revenue Service, DB will complete the hiring for administrative personnel including all positions in Finance and Administration, Human Resources, Customer Service, Sales and Marketing, and Innovation and IT, as well as the remaining open hires in Operations.

2. Development and Training of the operations workforce

DB will establish a Rail Academy to provide the training for all newly recruited staff and periodic refresher/recertification training thereafter in order to ensure that all employees have the necessary skills and competencies to execute safe, reliable and customer oriented operation and maintenance procedures and services. DB's training center concept has been one of the leading learning solution providers in the passenger transit operations industry for over 20 years. DB will utilize its experience, expertise and training network to provide the appropriate courses and proven tools in developing high-speed rail operation and maintenance professionals. DB will seek opportunities to partner with the California University system to both enhance our program offerings and to support exciting educational and research initiatives, like the 2015 High Speed Rail Workshop and the 2016 high speed rail program offered by Lyles College of Engineering at Fresno State to middle and high school students at its annual Explore Engineering Camp and its Summer Engineering Experience camp.

DB's Rail Academy will be established 36 months in advance of testing and commissioning. DB will identify skills requirements, skills gaps, and working with local partners, such as the

California State University system, local technical/ trade schools, and career placement agencies to recruit candidates.

Key instructors will be qualified and will undergo a train-the-trainer program. This train-the-trainer concept will ensure that a sufficient number of properly qualified local trainers will be at hand to qualify the employees in time. More trainers will be required for pre-operations phase than in the operations phase for providing the refresher training and the trainings for newly recruited staff during Revenue Service.

Training Development and Execution

DB is highly experienced in working with testing and certification bodies: Traffic-Cert is an independent testing and certification body within DB and is monitored at regular intervals by the German Association for Accreditation (Deutsche Akkreditierungsstelle GmbH), thereby providing DB's customers with an assurance of quality. DB will coordinate with the FRA and work closely with other relevant federal and state oversight agencies to ensure compliance with training requirements such as 49 CFR 240 and 242, ensuring that federal safety standards for eligibility, training, testing, certification and monitoring are incorporated into our program.

Overview of Training Program

The training program will be comprised of a number of discreet modules covering specific subjects pertinent to management, operations and facilities maintenance. Depending on the subject matter, training on a particular module will cover several classifications of employees. For example, Conductors, Engineers and Supervisors will be trained in operating rules and procedures. Conductors, security personnel, and customer service representatives will all be trained in customer service. In this way, employees will have an understanding of the responsibilities of other positions around them and will be better prepared to work collectively to meet organizational goals and the needs of the system's users.

Organizational Orientation and Mission

All employees will attend training modules on the history of the CHSR system, its future and on basic organization. The major themes addressed in these modules will include: organizational orientation; customer service; safety and security; employee conduct and human resource policies; and Drug and Alcohol testing program. DB believes that every employee contributes to the provision of a safe, secure and user-friendly transportation system. These themes will be covered specifically in these modules but will also be integrated into other, more specialized modules as well.

Position-Specific Modules

In addition to the organizational training described above, each position will be slated to attend position-specific training modules, as dictated by their job description. These modules will provide detailed information on the functions and responsibilities of each position, enabling employees to carry out their roles within the organization. Position specific training will be conducted upon hire and refresher / recertification training will be conducted as required. Refresher training will also be provided post-accident/post-incident and as determined necessary for satisfactory job performance.

Classroom training will be mixed with on-the-job-training (OJT) to make sure theory translates into practical applications. The training portfolio will range from purely technical to leadership. All

employees will receive safety training. Only fully qualified train crews will be permitted to operate HSR trains.

Two general categories of training are detailed below.

Training program for management and non-technical personnel

DB will focus on training topics on railway fundamentals, including rules and regulations, operating HSR network, safety, accident / incident response, radio communications, leadership, human resources, and finance and accounting. We will also take advantage of university programs in management and engineering to advance the professional development of our staff.

Training program for operational and technical personnel

Operational staff will be qualified based on the job requirements and undergo technical training programs. The duration of each training program will depend on the education and experience level of the candidate. The training program for train crews and for operations supervisors will include railroad safety, accidents/incidents response, railroad operating practices, train driving hours, safety at work, new techniques / vehicles / component trainings; and will specifically address, as required, Operator certification training (49 CFR Part 240 and Part 242); Operating Rules for operations employees (49 CFR Part 217.11); D&A training for supervisors (49 CFR Part 219.11 (g)); Emergency preparedness training (49 CFR Part 239.101); Radio communications (49 CFR Part 220); Railroad accidents and incidents (49 CFR Part 225); and GCOR Transportation. DB will establish a recertification program in accordance (49 CFR Part 240 and Part 242).

Training for facilities maintainers will include roadway worker protection, blue flag protection, radio communications, and accident/incident response.

Knowledge and Skill Testing

DB will implement a testing program to verify that, prior to initially certifying or recertifying any employee, the person has demonstrated sufficient knowledge of FRA-requirements and TOC rules and practices for the safe operation and maintenance of the HSR service. DB will develop and implement a testing program for individuals being evaluated for certification as a Conductor or an Engineer, which will examine the candidate's knowledge of our operating rules and procedures, including safety and operating rules; timetable instructions; compliance with all applicable Federal regulations; physical characteristics of the territory; use of any job aid that a railroad may provide; and equipment inspection and troubleshooting practices.

Vision and Hearing Acuity Testing

DB will require all Conductors and Engineers to complete hearing and vision acuity testing, in accordance with 49 CFR 242.117, as applicable. The testing will be conducted by a medical examiner / facility appointed by DB.

Certification

DB will administer certification program, in accordance with FRA requirements, and will maintain all training records, including copies of employee driving records, results of knowledge and skills testing, and results of vision and hearing acuity tests as well as other performance evaluations, complaints and disciplines relevant to performance. DB will issue certificates to qualified employees. The certificate will indicate that DB has determined the certificate holder is eligible to

perform the certified job functions. The certificate will also include any conditions or limitations to the employee's operational authority and show the effective date of each certification.

Maintenance of Employee Training Records

Comprehensive employee training records will be maintained in a computerized database including the name of the employee, the course title, the instructor, the date completed, test scores, and certifications, where applicable. These records will allow DB to assess employee skills and to determine what types of additional training may be necessary.

Labor Relations

DB will develop equitable wage and benefit packages suitable for the local labor pool and create an organization that fosters the professional development of our work force. Should any classification of employees choose to unionize, DB will in good faith negotiate labor agreements for salaries, benefits, and working conditions with the Union.

DB's approach to labor relations is characterized by long-term trustful cooperation with trade unions. Our experience of labor conflicts involving long running strikes is comparatively low. This cooperative model is due to our background as a former government authority that was successfully transformed into an international and profitable public limited company without compromising employee rights and benefits.

ACI also has extensive experience in us labor management. All of ACI's operations have union representation of workers. ACI views its relationship with labor as a means to achieve fair compensation and benefits that value employee contributions while maintaining appropriate work rules and recognizing market conditions. Notably, in advance of taking over operation and maintenance of the large commuter rail service in the Greater Boston area, ACI successfully negotiated labor agreements with 14 separate unions representing 1,550 employees. In Puerto Rico, ACI has successfully negotiated three collective bargaining agreements covering 21 job classifications and approximately 270 employees. The contracts were the first of their kind in Puerto Rico to include a no-strike clause. In Phoenix, where Valley Metro had obligations under Section 13 (c) of the Urban Mass Transportation Act of 1964, ACI worked with the union to implement a process for the screening and hiring and fallback rights of employees.

DB expects to be designated a "covered employer" by the federal Railroad Retirement Board and will comply with the Railroad Retirement Act, the Federal Railroad Unemployment Insurance Act and the Federal Employers Liability Act. DB will work in partnership with the Authority and with the union to ensure smooth mobilization of labor and the development of a collective bargaining agreement that preserves management rights and provides fair compensation and a safe work environment.

3. Implementation of a Safety and Security Plan

As described earlier in Section *Security and safety arrangements (Key Deliverable 8)***Error! eference source not found.**, DB will develop safety and security plans and procedures during the First Phase that will be implemented prior to and during Second Phase Operations. Creating a true safety culture within the organization will require a combination of words and actions.

DB's organization will include a Quality, Safety and Security Department headed by a chief safety officer who will report directly to the Sacramento-based CEO of our company. The

department will be responsible for providing technical and administrative direction on all safety and health programs; evaluating compliance with DB safety and security plans, conducting safety audits, monitoring compliance with OSHA and FRA regulations as well as internal safety procedures; developing and tracking safety performance metrics, and investigating incidents.

On Day 1 of operations, senior management will issue a bulletin to all employees reminding them about the importance of workplace and operational safety and empowering them to report potential hazards. DB will convene a joint labor management health and safety committee to track safety metrics, address concerns and implement changes intended to improve the safety environment. Safety performance results will be posted in prominent places. Audits will be conducted to determine if proper practices, documentation and record keeping are being followed.

The implementation of safety throughout the organization will be supported and assessed by consistent risk analysis and risk assessment, followed by the monitoring phase and performance control via audits, inspections evaluations and corrective action where necessary.

Since the leading cause of train accidents in the US points to "human factors," DB will perform risk assessments and determine mitigation actions such as employee training, operational testing and "fitness for duty checks" in the system safety program. Occupational health and safety training will be provided to all employees along with job-specific training to ensure that all employees understand the safe way to perform their work. All of our subcontractors and suppliers will be required to adhere to the same safety protocols that apply to the DB staff. DB will carry out random checks, audits and assessments of subcontractors and relevant system suppliers.

DB views safety and security as a broad partnership among many key stakeholders: the Authority, company management, workforce, labor unions, the community, suppliers, service-providers, emergency responders, state and federal regulators. Irrespective of the individual roles they play, everyone has the same stake in coordinating so that no harm results from operation of high speed train. One of the biggest safety challenges will be introduction of HSR service in corridors that either have no train service today or experience trains traveling at slower speeds. According to the FRA there are more than 400 trespass fatalities annually, making it the leading cause by far of rail related deaths in us. In addition to physical protection of the right of way, it will be essential to carry out public awareness campaigns with schools, universities, community centers, religious organizations and the business community about the danger of encroachment of vehicles and people on the right of way.

DB will also place a high priority on effective response to emergencies, including accidents, acts of terrorism, and natural disasters such as earthquakes, flooding, forest fires, and drought. Working closely with the Authority, DB will:

- Establish working relationships with federal, state and regional emergency management organizations, including the Federal Emergency Management Agency and the California Office of Emergency Services,
- Train employees on the National Incident Management System (NIMS), including Incident Command,
- Prepare a Continuity of Operations Plan (COOP),
- Conduct regular preparedness drills for all types of emergencies in coordination with local emergency responders such police, fire and emergency medical personnel.

DB personnel who are required to respond to abnormal situations, emergencies and failure incidents will be fully trained on the plan. In all emergency situations, safety, customer needs and resumption of normal service in that order will top the list of our priorities.

New hires will be subject to physicals, drug and alcohol screening and criminal background checks. Once service beings, employees in safety sensitive positions will be subject to random drug and alcohol screening as well as probable cause and post-accident screening per 49 CFR Part 219. Use of personal cell phones while on duty will be strictly prohibited.

Consistent with the requirements of 49 CFR 225 and FRA's Guide for Preparing Accident/Incident Reports, DB will conduct thorough investigations of accidents. Reports will cover physical characteristics of the scene, interview / investigation findings, sequence of events, probable cause, contributing factors, conclusions and recommendations.

As a data-driven organization, DB will establish and monitor key safety indicators such as reportable and non-reportable injuries, rules violations, hours of service compliance, lost time injury frequency, and efficiency testing compliance. Trends will be tracked in order to evaluate performance and to take corrective action where needed.

Security

As a greenfield project, CHSR has an opportunity to benefit from industry lessons learned since the terrorist attack on the World Trade Center in 2001 as well as more recent attacks on train systems in France, Belgium and other parts of the world. The most important lesson learned is the constant need for vigilance.

DB will implement a Security and Emergency Preparedness Program that takes into account operational deterrence and surveillance technology as well as physical barriers. Access controls will be imposed. The plan will cover organizational roles, operational training, preparedness, table-top and field drills, and threat and vulnerability analysis. In conjunction with the Authority, we will work to establish coordination protocols with federal and state security agencies such as the Transportation Security Administration (TSA) and California Office of Emergency Services; state and local emergency response organizations, and industry organizations such as the Mass Transit Policy and Security Peer Advisory Group.

TSA has developed several risk-based programs and tools that are designed to test and evaluate security plans, including prevention and preparedness, ability to respond to threats and cooperation with first responders. These are resources that can improve operator capability in areas such as training, public awareness campaigns, and best practices.

Cyber security is another critical factor. Transit systems are data rich as a result of ticketing transactions, operational technologies and diagnostic tools. At DB, IT security is embedded in a well-defined policy framework that includes corporate regulations and accountabilities throughout the organization. Risk management, including threat analysis, has led to the application of a battery of sophisticated tools to protect against information intrusion. In addition to protection tactics, DB has specific processes to detect, respond to and recover from IT failures. Worldwide, more than 100,000 employees rely on information and communication technology transmitted through 8,400 servers. To date, we have blocked 1,300 websites infected by malware and we divert 90 per cent of email spam. Employee awareness remains one of our best defenses.

DB is committed to taking all necessary steps to produce an exemplary safety record and optimal reliability and availability of assets and operations. DB will comply with auditing requirements established by the Authority and requests from competent authorities for information. Notification of safety issues by the FRA or other federal or state agencies will be promptly reported to the Authority.

4. Testing and Commissioning

We expect to take a leading role in the testing & commissioning phase. Therefore we suggest facilitating this responsibility into a T&C Manager with adequate staff as part of the Early Train Operating Company. He would supervise the planning and execution of the testing & commissioning phase and lead the process of obtaining required certificates from the FRA. The T&C team will attend the testing and commissioning of the Systems, including participation in the tests at all relevant stages as defined in the Testing and Commissioning Plans, with special emphasis on processing the results and the management of the test reports of each stage, including sign-off of Testing and Commissioning Certificates as defined in the Testing and Commissioning Plan.

The T&C team will review and accept the testing procedures of the systems for all relevant Test and Commissioning Stages - on behalf of the Authority and in cooperation with the Contractors - in order to confirm:

- Adherence to performance specifications,
- To establish suitable and necessary conditions which allow the system's testing, integration testing, dynamic testing and trial operations
- And to enable the management and monitoring of the testing phases.

The T&C team will supervise that subsystem installations, checkout and integration activities are accomplished in accordance with the Contractors' contractual requirements. The T&C team will verify that: each subsystem, and assemblies thereof, are installed and interconnected in accordance with the approved design drawings and engineering installation instructions; they function in accordance with the intended design and perform as a standalone interface; and, interface provisions have been properly implemented.

The review procedures related to equipment operation, maintenance manuals and handover procedures to the Authority will be the responsibility of the T&C Team.

We will review Test and Commissioning submissions as described in the Testing and Commissioning Plans for compliance with the contractual requirements. The PMC will supervise that proper documentation procedures are followed by the Contractors and review the integration process and programme. We will also review the spare parts, special tools and test

and diagnostic equipment provided by the Contractors and will verify compliance with the project specifications, checking and reporting to the Authority and that each item supplied is fully identified by reference to the manuals and catalogues and information is properly entered into a maintenance management system. The T&C Team will review all handover packages prepared by the Contractors for compliance with the contract requirements, and sign the Taking Over Certificate.

5. Commercial Readiness Activities

During the Pre-Operations period, DB will make appropriate preparations for a number of commercial readiness activities, including installation of the selected revenue collection system and initiation of branding and marketing activities to build awareness and interest in the new HSR system. Additionally, DB will develop an assignment and tracking system to ensure compliance with all FRA certification requirements.

Revenue Collection System

It is anticipated that by the end of the First Phase consultation period, the Authority will have selected and procured a preferred revenue collection system and decided on an array of ticketing and payment options. At that point in time, DB will turn its attention to activities related to readying the system to collect fares from Day 1 of Phase 2 operations. These activities will include the supervision of installation of related technical equipment; finalization of alternative payment options; establishing sales offices and accounts, and installing back office systems for recording revenue. In addition, DB will link up with travel planner applications (e.g. DB Navigator; Google Maps) and price comparison websites (e.g. Wanderu.com) to gain greater visibility for HSR.

Marketing

In the years preceding actual operations, DB will begin executing the branding and marketing plan developed during the First Phase and approved by the Authority. The marketing strategy will be driven by two goals: *educate* people about the new service and *persuade* them to change longstanding travel habits to come aboard.

Even on well-established passenger rail systems, the great majority of non-riders say they know little about the service. Educating the public about a brand new type of service will be an even greater challenge. DB will execute an aggressive public information campaign that will generate interest and intent to ride while educating about key characteristics of the system, including train schedules, fares, how to purchase tickets, station locations, parking, connecting services and accessibility. DB will target stakeholders (e.g. employers, destination cities) and potential riders, including commuters, occasional business and leisure travel customers, seniors and students.

To influence customer decision-making, DB's marketing approach will build emotional appeal of the experience while promoting benefits such as convenience (travel time, personal productivity, etc.) combined with variable and competitive fares. Some travelers will be influenced by the social and economic benefits of reducing traffic congestion, improving air quality and creating more sustainable land use patterns consistent with California's climate change awareness. Sales will be stimulated through state-of-the-art booking solutions, multitude of sales channels and transfer options to other transportation services. The team will develop fare ranges tailored to different customer types and geared toward optimizing utilization rates, similar to the algorithms used by the airline industry. A range of promotional offers will be offered to entice the public as well.

The DB team will develop and implement a fully integrated branding and marketing program to promote the service and generate ticket sales, including a paid media, social media, earned media, community relations. We will work closely with the Authority to develop assets and target potential sponsors for naming rights. Our team will develop an innovative, easy-to-use website and app as a key sales solution as well as a means for communicating service information to the public. The recommended paid media plan will be optimized for separate target audiences using a variety of media to reach audiences where they live, work, travel and play – including radio, traffic report sponsorships, TV, out-of-home, digital ads, sponsored social media posts, direct mail and targeted email blasts. Other supporting marketing strategies will include collateral materials such as brochures and branded schedules, influencer engagement, marketing displays, kiosks at stations, partnerships with stakeholders, and coordination with the Authority for events activities (e.g. open houses, forums, media events) to promote the service.

DB will develop a Customer Communication and Service Concept with specific goals, timeline and means for monitoring performance. Ridership will be the key indicator of marketing success, of course, but DB will also continue to measure customer satisfaction once the service is underway and track other indicators such as click-through rates to the website, social media engagement and analytics, earned media value, added value delivered from paid media, eblast open rates, and influencer and stakeholder engagement to make sure that what we have promised is what we are delivering.

FRA Compliance

DB will have lead responsibility for obtaining required FRA approvals, including certification of programs, plans and procedures such as random alcohol testing (FRA 219); written certification program for locomotive engineers and conductors (FRA 240, 242); Railroad Safety Program Plan (RSPP) (FRA 236); Emergency Preparedness Plan (FRA 239), and work schedules and fatigue mitigation plans (FRA 239). The FRA will also require approval of the Authority's PTC Implementation and Safety Plans (FRA 236).

DB will also be responsible for ensuring that FRA forms (F6180 series) are filed timely and that all other documentation required by the FRA is complete and up to date. This includes existence of a reporting and tracking system for passenger equipment defects (FRA 238); written program of operational tests and inspections (FRA 217); procedures for inspection, testing and maintenance of fire safety systems and equipment (FRA 238); code of operating rules, timetables and timetable special instructions (FRA 217), and written internal control plan (FRA 225).

During the pre-operations period, DB will prepare a matrix listing all FRA required submittals and other documentation, identifying the DB staff person who is responsible for preparing the paperwork and its current status. Matters involving submittal for FRA approval will be highlighted.

6. Innovations

Providing seamless mobility and high quality of service remain the main goals of pushing digitalization and innovation in the fields of IT for the HSR systems.

HSR faces many challenges from other modes of long-distance transport such as low-cost airlines, buses, etc. The needs of travelers have changed with the evolution of mobile traffic applications and real-time information. Personalized travel solutions including live-ticketing are the current demand. The digital revolution in the railways sector has significantly advanced in

recent years. Digital trends, such as the "3Vs" (data volume / variety / velocity) offer both great opportunities as well as challenges for the HSR systems. The DB approach in this regard is to combine existing digital technologies with new and innovative solutions to improve performance. DB has been very active on this front with the launch of the digitalization strategy for the Group in 2014 with multiple digital labs being established from 2015 onwards. DB Digital Ventures was formed in 2016 with 100 Million Euros of venture capital to promote ideas to develop customer as well as low-maintenance and performance oriented solutions. There are currently 5 investments in their portfolio with prominent co-investors including Intel Corp. Additionally, DB Systel has an ongoing cooperation with Amazon to utilize its cloud services to handle operational data and computation. Information Technology in HSR can be looked at essentially from the perspective of the users as well as the perspective of Operations and Maintenance.

DB will use a multi-criteria assessment method for the software acquisition that considers various attributes from safety and resilience to ease of maintenance. The main software system established will ensure the physical safety of passengers as well as cyber-safety of passenger and train data; interoperability with other transport providers' systems and compatibility with multiple operating systems across multiple platforms. To increase ridership for the HSR system an open, published framework providing full interoperability, scalability and modular structure whilst limiting impact on existing systems or centralized standardization would be needed. These characteristics combined with an architecture that enables easy maintenance and an efficient life-time cost will be considered when determining between either acquisition or development.

Signaling solutions, energy management solutions, digital-based maintenance with monitoring and diagnosing tools and communication solutions are few of the examples of existing solutions that would improve performance and safety. Technologies such as predictive maintenance, personnel and train movement planning, on-board infotainment (internet access), real-time passenger information systems, new apps, new HMI, seamless access to all travel services as well as last-mile service providers, e-ticketing, real-time pricing, peak- and reduced price models, digital tracking applications, parking solutions, CRM systems would assist in improving end customer satisfaction.

In addition to the software side of the IT-solution, data analytics will play a crucial role in guaranteeing the aforementioned vision of seamless mobility for the end customers' journey from A to B complete with multimodal connections. Data analytics involves data capture, storage, privacy, in-house and external analytics as well as 3rd party access to API's among others.

DB will develop / acquire an integrated software platform that links various services like mobility planning a pricing, booking and payment, validation, settlement and data analytics for the CHSR system. DB will draft a memorandum of understanding, license and service agreements with the respective agencies and parties.

Best Practice Examples for innovation in IT

Modalyzer

Modalyzer is mobility logbook for learning more about individual mobility: modalyzer automatically detects nine different modes of transportation, simply by carrying a smartphone. Maps and statistics will be able to collate data and tell when and where someone used what mode of transport, how long one has been out and what distance has been travelled. DB is a major partner of InnoZ, the developer of modalyzer. Through modalyzer we could gather real

mobility data and through it get a better understanding of the passenger's mobility behavior, improve it through additional services and increase ridership and revenue on the system.

Predictive Maintenance with InfraView

The networking of equipment data on an open, generic platform (infraView) provides the basis for predictive maintenance at DB. The use of intelligent data diagnostics and analyses increases the equipment reliability and quality and significantly reduces costs.

The four quadrants of predictive maintenance at DB:

- Vehicles monitor Infrastructure
- Infrastructure monitors vehicles
- Vehicle self-monitoring
- Infrastructure self-monitoring

The benefits of applying predictive maintenance are among others:

- The condition forecast for track geometry quality makes it possible to specifically plan route repairs
- Greater cost-efficient maintenance
  - Advance notification of damage
  - Condition-dependent exchange of components
  - Longer maintenance intervals
- Fewer vehicle breakdowns
- Greater level of security
- Faster fault repair
- Preventing wear and tear
- Forecasts for imminent incidents

DB App Store

With the DB Navigator, DB has one of the most popular and most frequently used mobility applications in Germany, which is being continuously developed to include other services. DB Navigator allows customers to plan, book and manage their journey among different modes of transport. DB Systel operates the EMM (Enterprise Mobility Management) with almost 70,000 devices and controls the code on these apps. "Qixxit" is the intermodal mobility portal, which intelligently links means of transport and optimizes the travel connection on the basis of personal preferences. DB Connected Travel connects travelers through LinkedIn. With "DB Bahnhof live", the customers receive all information about arrival and departure times, shopping, gastronomy and services. The "elevator guarding app" includes a notification service about the operating condition of the systems and offers a whole series of useful information for travelers at the train station.

iii. Relations with stakeholders

CHSR is about connecting communities quickly and efficiently. It is being built to meet the needs, vision and goals of a diverse array of stakeholders. Stakeholder involvement and integration are critical in order to maintain public support for the project and to maximize ridership potential. DB's expertise engaging stakeholders is one of our distinguishing strengths. We bring deep experience understanding, enlisting, engaging and coordinating the needs of stakeholders to deliver efficient, integrated, passenger-friendly high-speed rail service.

Of course, the most essential stakeholder is the Authority. We will begin with a detailed Stakeholder Outreach Plan for the Authority's review, input and approval. We will inform and involve the Authority through timely consultation and notification throughout the process, and on sensitive issues such as material changes to timetables and fares.

Transportation providers in areas served by HSR are front-line stakeholders. Those providing connecting services and fulfilling last mile access are especially important partners, including bike-share, taxi and ride-hailing services, and walkable community planning organizations like CaliforniaWalks. Connecting service stakeholders include Amtrak and intercity rail lines, commuter rail services such as Metrolink and ACE, bus lines, transit providers, local transportation management agencies (TMAs), and freight operators. We understand how to work with all these transportation providers, harmonizing with their schedules and customers' needs, while remaining focused on optimizing the benefits and operation of HSR (See Section Fare integration and inter-operability (Key Deliverable 6) for more details.)

Public agencies and civic leaders in area served by High-Speed Rail are very important stakeholders whose needs and opinions we will proactively seek and integrate. Elected officials provide valuable connection to the support and feedback of local citizens, so we diligently keep them informed and seek their input in advance of any material changes in fares or schedules. Other key public agency stakeholders include federal agencies, national and state lawmakers, state agencies, and local departments of transportation.

The California business community and labor unions are very important groups representing both the economic interests served by the building and operation of HSR and access to a key target audiences: business travelers. We will create customized messaging for large businesses, labor unions and pro-business groups like chambers of commerce, industry associations, business development agencies, and convention & visitors bureaus (CVBs). Business communities in rural areas will receive particular focus. DB will encourage employers to offer discounts and incentives to employees, underwrite fares for business trips and subsidize rail passes. It will include instructions for encouraging employees to use HSR as an efficiency solution and to help meet their social responsibility goals for greenhouse gas reduction.

To help engage these business and labor stakeholders, we will create electronic toolkits that will make it easy to share information with their members, convention groups and employees about the advantages of HSR as well as timetables, maps and fares. Toolkits will include educational materials and customizable content such as messaging for social media, Eblasts, newsletters, infographics, web banners and widgets to connect directly to the High-Speed Rail website. Materials will be customizable for them to add their logo to share with their constituents and employees.

Groups of concerned residents are also important stakeholders. We will identify and engage citizen advisory committees and action groups to help promote HSR, including those focused on transportation, environment and smart-growth issues (e.g. SPUR in San Francisco). Outreach will include advocates for culturally diverse and rural populations underserved by current air and rail networks, to understand their continued challenges and help provide greater access.

Colleges and universities are also important. College students are open to alternate transportation modes and frequent users of intercity and interstate rail during breaks. We will create customized messaging, promotional materials and offers to engage students and faculty to make high-speed rail part of their regular transportation network.

Another high-level class of stakeholders is law enforcement and emergency responders. Early on, DB will create clear communication channels and dovetail chains of command with TSA, CHP and local law enforcement agencies to ensure a seamless response to any terrorist or criminal activity threat involving High-Speed Rail. Similarly, we will work with local emergency responders including fire departments/paramedics and ambulance services to create smooth procedures for speedy treatment and transportation of any medical emergencies.

DB will also develop a Disaster Response Plan working with FEMA, CalOES, CHP, CPUC, Caltrans, and local emergency response agencies and local trauma centers–ensuring rail personnel are prepared and trained for appropriate action in the event of a major disaster such as an earthquake, flood, or in the very unlikely event of a collision involving the High-Speed Rail line. Emergency response drills will be held regularly to reinforce training and skills to ensure a rapid and seamless response.

The news media and social media influencers will also be engaged and empowered to help educate the public about advantages of HSR and gain valuable public input through their responses (See Marketing and branding strategy for the system (Key Deliverable 9)).

DB's stakeholder outreach will be closely coordinated with the Authority and in certain instances, such as elected official and media outreach, cleared in advance.

iv. Incorporating the Authority's sustainability goals

California is a national leader in implementing programs to combat climate change, from expanding access to renewable energy to enacting the cap-and-trade program, which was recently extended to 2030. The goal put forth by Governor Edmund G. Brown is to reduce greenhouse gas emissions (GHG) to 40% below 1990 levels by 2030, one year after the system is scheduled to connect San Francisco to the Los Angeles basin. To accomplish that goal, the Governor has called for a 50 percent increase in renewable electricity production, a 50 percent reduction in petroleum use in vehicles and reduced GHG emissions from natural and working lands.

CHSR will make a strong contribution to achieving California's environmental goals by shifting travel away from higher GHG-emissions modes.

DB has a robust sustainability program and fully supports the principles and commitments outlined in the Authority's Sustainability Policy and supporting documents. On a strategic level, DB can best support the Authority by providing predictably reliable train service that will attract riders, increase the market share for rail transportation and reduce GHG emissions. By helping to promote integration of regional transit services DB will further advance the goal of reducing per-person transport emissions.

During the First Phase, DB will focus on ways to minimize environmental impacts, optimize the use of resources and create a healthy work environment. Our review of facility, vehicle and system designs will cover energy consumption, GHG emissions, service life and durability, appropriate materials, use of recycled materials, and level of required maintenance. We will also evaluate how well designs address climate change risks such as rising sea levels, wind, heat waves, and drought. Given the fact that excess carbon dioxide that is heating the planet rose at the highest rate on record in 2015 and given the fact that excess carbon dioxide that is heating the planet rose at the highest rate on record in 2015 and 2016, effective response to climate change will entail both *mitigation* and *adaptation* to predictable conditions.

Consistent with the Authority's Urban Design Guidelines, we will also use the consultation phase to encourage designs that recognize the role that "destination" stations play in terms of both commercial development and walkable mixed use communities. It is clear that sustainable economic development that avoids detriment to environmental and natural resources is an important priority for the Authority.

DB has a strong commitment to the use and extensive experience in the application of renewable energy sources on HSR systems. By 2020, DB aims to reduce its CO2 emissions from rail, road, air and ocean transportation by 30 percent compared to 2006. This is 50 percent more than the old goal, which was reached in 2015. By 2020 DB wants to raise the share of renewable energy to 45 percent. As of the end of 2015, renewables accounted for 42 percent of the entire traction current mix. One of the main reasons for this success was the additional green electricity, which the DB purchases specifically for its environmentally friendly long-distance products and services. By 2050, DB has set a goal of achieving rail transport that is completely CO2-free.

Energy Efficiency Measures:

- ***Train length***
- ***Car weight***
- ***On-board energy storage***
- ***Wayside energy storage***
- ***Regeneration voltage***
- ***Friction brake blending***

Based on our experience, there are many ways that we can support the Authority's commitment to sustainability, including:

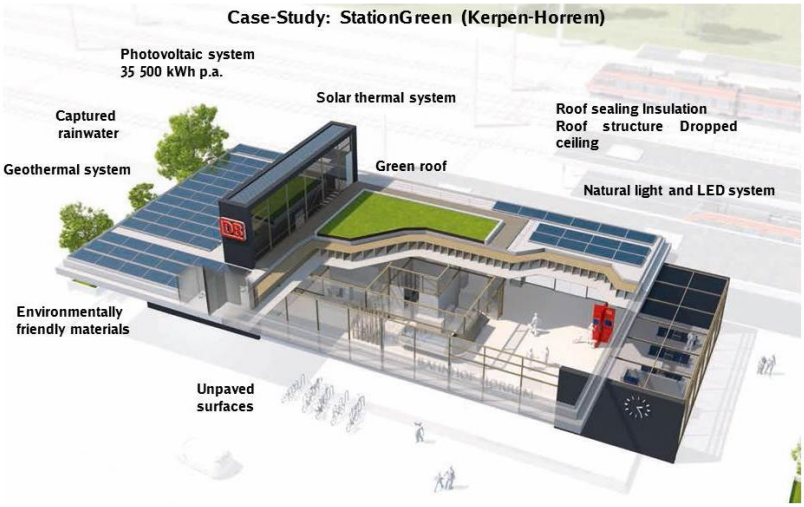
- Incorporating sustainability into design, construction, operation, and maintenance
- Reducing energy consumption, promoting renewable energy sources and minimizing direct and indirect generation of greenhouse gases
- Reducing the consumption of potable water through use of reclaimed, recycled and gray water for appropriate applications
- Reducing degradation and depletion of environmental resources through cost effective waste prevention and material recycling programs.
- Reducing reliance and safe disposal of toxic and hazardous chemicals
- Maximizing the use of environmentally preferable products, goods and services
- Documenting responsible stewardship practices for purchase, use and disposal of electronic assets

To accomplish these initiatives, DB will deploy a variety of tactical steps revolving around *technology* (e.g. LED fixtures, motion sensors, photoelectric dimmers); *training* (e.g. preprogrammed low energy running) *standard operating procedures* (e.g. recycling, use of low emission cleaning solvents); *policy initiatives* (e.g. water preservation), and *management practices* (e.g. energy usage indicators).

The importance of sustainability will be underscored throughout the organization. Working with the Authority, DB will create Green Teams to establish objectives, develop baselines, set measurable targets, identify specific sustainability initiatives, measure progress and publish results. The ultimate goal will be to become a "zero waste" and "zero carbon" organization, to eliminate the use of all hazardous materials, to use no more water than the amount that falls on the property and to eliminate all negative environmental impacts caused by our activities.

The Authority's Sustainability Policy makes several references to the UIC, including a commitment to contribute to the UIC "Low Carbon Rail Transport Challenge" and its global 2030 / 2050 targets, presented in 2014 at the UN Climate Summit. The policy also pledges to report data on the Authority's specific energy consumption and CO2 emissions to UIC on a regular basis, in order to promote and demonstrate the continuous improvement of the railway sector at an international level.

DB will also incorporate climate change considerations into our recommended approach for long-term asset management and emergency preparedness. For example, asset condition should be monitored in conjunction with environmental conditions to determine how climate may be impacting maintenance cycles and asset performance. Extreme weather will also factor heavily in DB's emergency management plans. Finally, protecting social capital is an important element of an overall sustainability framework. This human capital "family" includes employees, passengers, suppliers and communities.



Our Horrem station (figure above) is the prototype for a new generation of environmentally sustainable station buildings. As Europe's first climate-neutral station, it is the blueprint for future projects in the innovative program named StationGreen and a benchmark for how DB will advise the Authority on design of HSR stations.

C. Interim Financial Plan (Key Deliverable 11)

i. Financing planning principles

The financial plans – both the *Interim* and *Second Phase* versions, will enable and encourage *a continuous and open dialogue* about the financial and contractual development of System operations. This dialogue is a process we consider crucial, as it will help to establish and facilitate a level of mutual understanding as well as set financial performance expectations between Authority and Operator. An "open book" process will enable us to work side-by-side as partners towards the realization of financially self-sustainable operations. Understanding operational projections and impacts on costs of different operational variants, scenarios, procurement choices, technology approaches, etc., will enable fully informed decision-making on key Authority and Operator decisions during the coming years.

For the Initial Financial Plan development, in addition to close collaboration with the Authority, DB will rely on the existing reference material information provided in the RFP: 50 Year Lifecycle Capital Cost Model Documentation, Operations and Maintenance Cost Model Documentation, Service Planning Methodology, Ridership and Revenue Forecasting and 2016 California High Speed Rail Business Preliminary Ridership and Risk Analysis.

We define the **objectives** of the financial planning process as follows:

1. To develop a mutual and shared appreciation with concern to the *fundamental financial and operational expectations, uncertainties and challenges* inherent in commencement of rail service operations on the entirely new CHSR system and corridor.
2. To establish a baseline financial projection for ramp-up from Pre-Operations to Early Operations (up) to Full Operations, to be reviewed, developed and agreed on by the Operator and the Authority. The financial baseline will include the following:
    - Baseline operations and cost planning and projections;
    - Baseline demand and revenue forecasting; and
    - Baseline projection of financial position of operations and of the Operator, including ramp-up liquidity requirements, working capital, operating margins, and other key financial metrics.
3. Around this baseline, to develop shared views on:
    - *Possible variants* (e.g. different timelines on realization of System extensions, feeder lines capacity levels and success, technology choices, procurement implementation, etc.) which the Authority and the Operator consider sufficiently probable and relevant to analyze in more depth; and
    - A set of cost and demand/revenue *sensitivities* reflecting the above-mentioned uncertainties and challenges at different probability levels – with particular attention for the uncertainties around initial demand and revenue ramp-up.
4. To support any early dialogue on the development of the sample Franchise Agreement terms and conditions and to inform financial, operational or other parameters that the Authority and the Operator believe would need to be considered in those terms and conditions.

The financial planning process will feature a Business Plan document, Excel-based financial model and key assumptions book as the central instruments, developed to accommodate straightforward and direct transfer of information and data between Authority and Operator. The financial model:

- Will be dynamically linked to cost planning, operations planning and demand and revenue forecasting analyses where needed – as developed by the Authority (i.e. Business Planning and its underlying data and analytical tools and sources, to date);
- Will be built as a full-fledged Excel model using the internationally accepted and adopted *FAST* Modeling standard (www.fast-standard.org) which enables readability and ease-of-transfer of the model between Operator and Authority staff; and
- Can be shared on a regular basis following an "open book" approach with Authority.

ii. Planning as an open book process

In accordance with your RFP we understand the financial planning process will take place over two distinct stages:

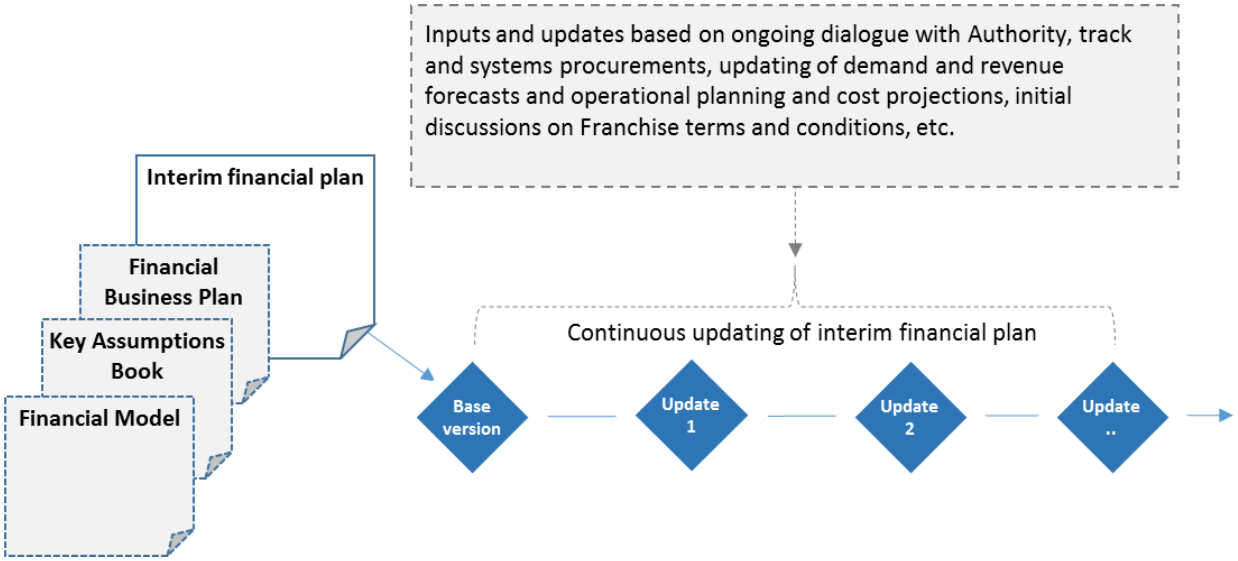


Figure - Interim Financial Plan: continuous "open book" updating

- **The Interim Financial Plan**

  We propose that the Interim Financial Plan should be developed very early during the implementation of the Pre-Development Agreement services. It will incorporate all relevant data points from the most recent business planning provided by the Authority and its advisors to date, as well as the Operator's initial assessment of these plans and adjustments where the Operator proposes that certain aspects could be further optimized and calibrated. We intend to develop the Interim Financial Plan following "open book" principles and to update it on an ongoing basis with new inputs integrating the latest insights and plans for service and operations, cost projections and revenue / demand forecasts *as well as* additional work the Operator and Authority would at this stage consider important to include. We would propose to "release" new full updates at regular intervals including annually, or more frequently as agreed to with the Authority.

- **Second Phase Financial Plan**

  A first release of the Second Phase Financial Plan will be delivered within six months or sooner from issuance by the Authority of the full draft Franchise Agreement. This initial version of the Second Phase Financial Plan will be a complete update of the Interim Financial Plan based on the latest relevant developments e.g. with regard to progress on construction of infrastructure and stations. It will also reflect terms and conditions and delivery time-lines that form the basis of the procurements and contracts for supply and maintenance of rolling stock, track and systems and stations. It will furthermore reflect to the extent possible the terms and conditions of the full draft Franchise Agreement. After its initial release, it will serve to inform both the Operator and the Authority during the process of further developing and negotiating the terms and conditions of the Franchise Agreement. Once agreed upon, it will also form the basis for the initial Business Plan and its regular updates afterwards.

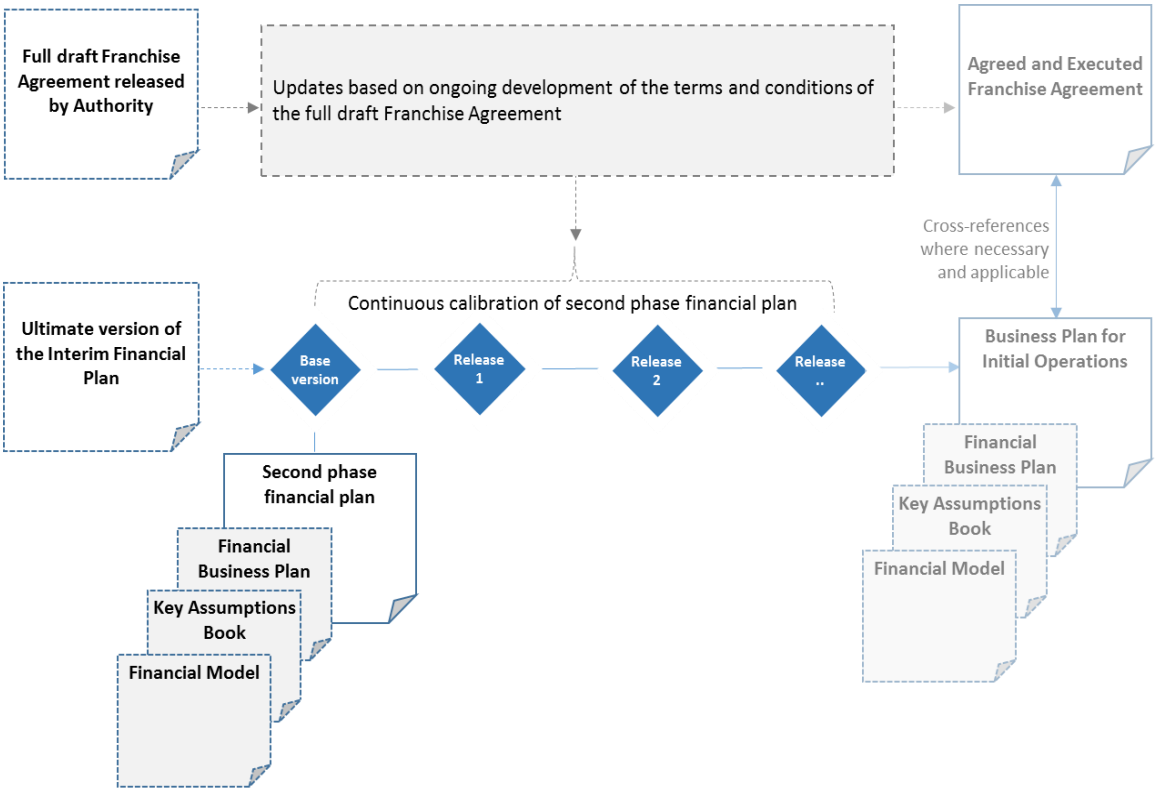


Figure – Second Phase Financial Plan: calibration as Franchise Agreement is developed further

During both interim and Second Phase planning, the Operator will regularly update and share the financial plan's constituent parts (the Business Plan, Key Assumptions Book and Financial Model) with the Authority, reflecting ongoing analysis and developments which are expected to have financial impacts on the initial operations of the System. The frequency of updates and calibrations should be flexible. It can be made part of Task Order requirements or other deliberations between the Authority and the Operator, in order to ensure it matches the level of dynamism and the intensity of developments at any given point in the Pre-Development or Franchise Agreement development proceedings.

The financial planning process we envisage will be an "open book" process, creating a level of transparency that enables the Authority to keep engaging with the Operator's developing views and analysis concerning the initial operations of the System. It will also create a framework through which the Authority can then calibrate or correct the Operator's analysis of certain developments and choices and impacts, where needed and in a timely manner.

iii. Tools and instruments

The Financial Plans will comprise a set of instruments and documents we propose jointly to develop as the Interim Financial Plan and subsequently the Second Phase Financial Plan.

This set of documents and instruments includes, but is not necessarily limited to:

Financial Business Plan

- **Financial Business Plan**

  The Financial Business Plan will be a living document which reflects the state of the Authority's and Operator's commercial and financial planning of Pre-Operations and

Operations. It will become part of the Authority's business planning framework for the overall System. This Plan will include at least:

- Latest state of project and operations planning;
- Latest cost projections;
- Latest demand and revenue projections;
- Latest planning for funding of capital needed to cover;
  - Initial capitalization;
  - Ramp-up liquidity covering initial shortfalls;
  - Working capital; and
  - Cash reserves and other instruments proposed for ensuring continuity of service.
- Strategic and operational actions taken, and outcomes / values measured with regard to the Franchise / Train Operating Company (TOC) Enterprise Value framework (including e.g. progress on cost control targets, ancillary revenue maximization, etc.);
- Proposed values for a set of parameters linked to realization to, and / or for incorporation into, the Franchise Agreement including at the very least:
  - Term of the Franchise Agreement and structuring of extensions if appropriate; and
  - Operator's relevant financial performance metrics including operating margin, financing ratios if any, return on capital invested / employed, value of revenue realized, etc.
- Areas of discussion or concern, reflecting the current agenda of discussion between the Authority and the Operator with concern to the financial planning for the System.

- **Financial Model in Excel format**

The financial model will be an excel model which is built in keeping with the **FAST** Modeling standard (www.fast-standard.org) which ensures full compliance with all of the design principles listed in the RFP.

We highlight the following principles in particular:

- All hard-coded inputs/assumptions will be documented into a limited number of designated worksheets, ensuring that the rest of the model comprises dynamic calculations only;
- Inputs/assumptions will match as much as possible the formats and definitions of their sources (e.g. for revenue forecast sources, cost projection sources, etc.) in order to ensure consistency between the financial model and underlying work by the Authority and the Operator;
- In keeping with the *FAST* standard, the model will follow clear logic in terms of flow –from inputs to volumes/quantities to costs to funding, tax and financial statements and metrics—and syntax—block modeling which calls up specific input parameters from other sheets before including these in a formula, ensuring that calculations can be reviewed easily without having to change to different worksheets;
- The model will feature one or multiple dashboard worksheets which provide the user with a summary of the most important model inputs and results, allowing it to optimize specific parameters without having to move through different worksheets, etc.;

- The model will calculate costs, revenues and funding resulting in financial statements for profit & loss, balance sheet and cash flow statement;
- The model will feature functionality to ensure tracking and comparison of input and output sets between model updates ("version 03c – 21jan2018 – 'insertion of traffic forecast 3728ae-c'") linked to different versions of the Financial Business Plan;
- Funding module(s) will be included to model funding sources, disbursements, costs and repayments for coverage of initial capitalization, working capital, initial liquidity shortfalls, etc.;
- Tax module(s) will be included to ensure understanding of the impact of tax liabilities on the Operator's financial performance;
- Specific output schedules will be built into the model for direct inclusion in the Financial Business Plan document (above) and the Key Assumptions Book (below); and
- The model will contain optimization routines in Visual Basic to allow optimization of certain key variables – however the use of Visual Basic and name ranges will be kept to a minimum to ensure transparency and traceability.

- **Key Assumptions Book**
  We propose to develop a Key Assumptions Book summarizing the financial model and therewith financial planning assumptions. The Key Assumptions Book would include, for a select number of assumptions, explanation as to the rationale and/or source of the assumption. The Key Assumptions Book could be attached to the Financial Business Plan as annexure.

iv. Strategies for cost control

We will implement standard accounting and finance methods for developing the project chart of accounts at the appropriate level in order to capture the lowest level of actionable and or manageable cost along with corresponding budget figures for measurement and comparison. In addition, an associated forecast by quarter will be development to reflect the latest information and status of the possible influencers that may change the outlook of the development of the cost elements. Regular financial reviews will be conducted with the Authority of the performance against budgets and forecasts.

During the Second Phase Operations / Revenue Service, DB will employ an appropriate integrated Enterprise Resource Management and Accounting software system such as Microsoft Dynamics AX, Oracle or SAP. This software will, at a minimum, provide the following capabilities, functions and controls: general ledger, balance sheet and income statement management, human resources time sheet, payroll, distribution process, supply chain, key financial data reporting, project planning, human resources, standardize critical business procedures and internal controls, and be compliant with GAAP and IFRS requirements, rules and regulations.

For the operations productivity management, we will identify and calculate the value of productivity actions to ensure costs are managed, and where possible, reduced during operations. Productivity actions will be developed using the Hartegrad Methodology (Degrees of Implementation) for taking cost saving ideas from concept to the bottom line on a measurable basis.

DB has documented processes and tools developed over 180 years of practical multi-modal integrated transit systems implementation and applications experience. It is our intent to bring the full portfolio of our captured and retained experience and learning to the CHSR project. By accessing this data base of products, services and tools with historically proven outcomes, the project can accelerate its learning curve across many disciplines of integrated transit systems operations and financial management. By definition, this approach will result in a more efficient transition from mobilization to mature operations by minimizing the unknown variables and mitigation of risks.

DB's approach to managing transit costs begins with rigorous systems requirements planning. Determining the desired performance criteria and associated fleet sizes, service schedules, headways and labor requirements that reduce the probability for significant and costly service realignments once in revenue service. This starts with applying many years of complex transit systems development and operations experience captured in the DB developed DB MAP application (management of requirements in projects). MAP is a workflow-based demand management system. A number of customer-specific requirement workflows can be mapped in addition to the requirement management process for service. The tool provides the option to map generic processes to create and evaluate requirements for projects and model multiple outcomes.

Another DB tool that can be utilized is DB Invest (Cost-Effectiveness Analysis). This application is used to calculate the cost effectiveness of capital spending on projects. The DB Invest allows you to create different versions of a cost-effectiveness analysis, which serve as the foundation for assumption tracking to determine potential financial outcomes.

Developing ancillary revenue sources

We believe that there will be substantial opportunities to increase funding through ancillary revenues. These include but are not limited to Value capture; Naming rights; and Station concessions.

Value capture from transit-related development

Developers of transit infrastructure have increasingly looked to value capture, that is, capturing the value from surrounding real estate from new infrastructure, through the following mechanisms:

- Special districts, including business improvement districts—Contributions from surrounding property owners based on property valuation or square footage;
- Tax increment finance—Allocates portion of incremental taxes in a district to the Project; and
- Other property owner contributions—Right-of-way and/or other property or monetary donations from directly affected landowners.

DB's exclusive partner, The Rebel Group, has had deep involvement in a number of value capture projects, including assisting ways to help fund the $3B MBTA Green Line Extension in Boston, MA, helping North Carolina's $1.5B GoTriangle Durham-Orange light rail transit (LRT) line develop a program to reap $42M from tax increment finance (TIF) based on increased economic activity around five stations. They also advised on a loan to San Francisco's Transbay Transit Center that was secured in part by several value capture monies.

We believe that the demand for real estate at and around rail and transit stations is and will continue to be at a premium, especially throughout California with many trends fostering this, including rising commuter congestion, a move back to urban areas, and a new desire to live in walkable communities served by rail and transit. The challenge that we are fully aware of is that value is already being "captured" or expects to be captured at many of the stations and corridors that CHSR will serve, such as the Transbay Transit Center, for example.

As is common in value capture, cooperation among a number of public agencies, including local municipalities, the regional transit agency is necessary for these funding programs to work. The key "lever" that our team will have, alongside the Authority, is the realization that the complete CHSR project benefits both CHSR as well local station stakeholders. We look forward to reaching out to these stakeholders, communicating this message, and working to find acceptable win-win agreements that result in some of the additional value of CHSR returned to CHSR to help pay for operations and maintenance and other costs.

One further way to leverage the Authority's presence is to take advantage of the 2015 Fixing America's Surface Transportation Act (FAST Act) provisions expanding TIFIA and RRIF's ability to support transit-oriented development (TOD) projects. The FAST Act expands TIFIA eligibility to include TOD-specific and local infrastructure projects. Projects can include parking garages, property acquisition, and bike/pedestrian infrastructure. The FAST Act also lowers the TIFIA project cost requirement for TOD and local infrastructure from $50M to $10M, making smaller projects eligible.

The FAST Act also extends the range of RRIF eligible infrastructure to "finance economic development, including commercial and residential development and related infrastructure and activities" near a passenger rail station. This new feature could be a way for CHSR to offer a "carrot" to developers to help them reduce financing costs for assets that benefit several parties, including CHSR. With CHSR support a developer may be able to access RRIF's inexpensive financing, build these facilities, and, in turn, share some of the benefits with CHSR.

Station naming rights

Following other transit agencies, naming rights are a further funding source that our team expects to consider. In the last decade, a number of transit agencies have entered into naming rights agreements, include the University of California San Diego Blue. These agreements can lead to small but material funding for capital and O&M costs up to 5-10% of capital costs. Naming rights are often sponsored by major hospital or universities, which are pleased to associate with transit that promotes healthier living, more environmentally conscious transport, and students / youth. Salesforce.com's naming rights deal, recently announced, to provide the Transbay Transit Center $110M over 25 years is an important precedent for other stations that CHSR will serve.

Commercial upside from station revenues

Rail and transit stations often house commercial activities, including food and beverage, retail stores, parking, and sometimes hotels and offices. Net lease revenues from these activities can help reduce some station operating costs. The major revenue source at these stations is often the parking facilities. As with value capture and naming rights, we would apply the same outreach approach to partnering with local agencies to share in this source.

v. Building enterprise value in the Second Phase

We highlight the framework for our strategy for building enterprise value. This framework is based on our in-house DB value management framework, tailored to the challenges and circumstances of the CHSR Franchise:

- Building enterprise value of the **CHSR System**, not just of the Operator / TOC:
  Enterprise value in the Second Phase does not only concern the financial development and robustness of the Operator / TOC, but it concerns the financial success of the development and operation of the CHSR System *as a whole*. The full potential of Operator / TOC enterprise value will only develop if our future partners (Authority, rolling stock and systems partners, other operators, political and institutional stakeholders, etc.) are successful too.

- Building Operator / TOC-specific enterprise value **as a going concern**:
  We will build enterprise value in the Second Phase with the goal to develop the operation of the System into a robust and stable going concern business – pursuing sound operational margins and funding / balance sheet positions, return over capital cost targets, building the CHSR brand and market position, driving operational excellence and pursuing maximal customer satisfaction, etc. –in order to ensure business continuity of the operation until *and beyond* expiration of the Franchise Agreement.

- Incorporating enterprise value drivers **into everything we do:**
  To achieve this, we will develop an enterprise value management framework, which features a set of enterprise value metrics that we will incorporate throughout our marketing, operating and financial management functions. These enterprise value drivers are in six important thematic areas as illustrated below.

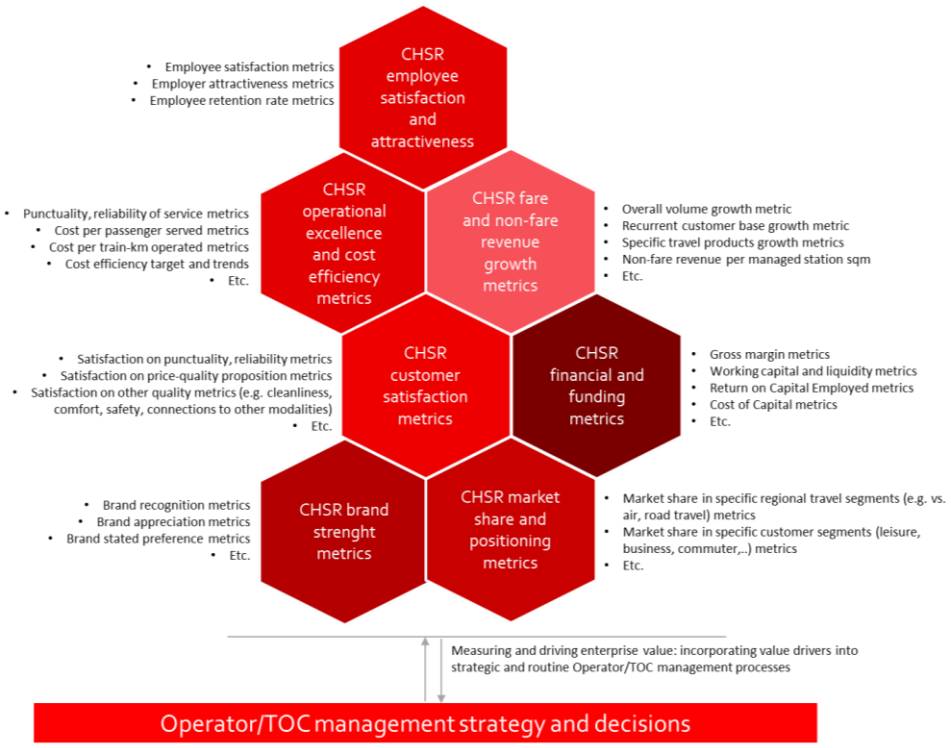


Figure - Enterprise value drivers (concept for value-oriented framework management)

vi. Key deliverables 2, 3, 4 and 9

DB has addressed the approach and methodology for these Key Deliverables in the respective sections of this proposal below:

Key Deliverables:

2. Calculation of ridership and passenger revenue forecasts under various scenarios and analysis of the associated impact on the Financial Plan. See Section 10.
3. Ancillary revenue scenario analysis and implementation proposal and analysis of the associated. See Section 9.
4. Calculation of Operations and Maintenance cost estimates under various scenarios and analysis of the associated impact on the Financial Plan. See Section 11
9. Plan to Market and Brand the system. See Section 14.

vii. Commercial terms

We note the Authority's desire to appoint an early Operator who is highly experienced and will work together with the Authority to achieve a Franchise Agreement that will specify the level of required risk transfer and the Operator's financial commitment and associated financial return. Our responses to the terms of the Franchise Agreement as set out below are based upon the market experience of DB and members of its corporate group for franchise agreements of this nature. Our approach in commenting and making recommendations on the Franchise Agreement terms is to:

- Ensure that risk and responsibilities are allocated as between the Authority and the Operator to the party best placed to manage, mitigate and control such risk; and
- Establish concepts that can be developed in conjunction with the Authority during the Phase One.

In each case, designed to ensure that negotiations of the Franchise Agreement during the Phase One are collaborative and not unduly protracted.

Our response to the Franchise Agreement terms and conditions are provided as follows:

1) The first part of the table sets out the elements which we believe are key and need to be prioritized;
2) The second part of the table sets out the provisions which, from our experience, we think are missing and should be included in the Franchise Agreement; and
3) The third part of the table sets out other ancillary matters and our recommendations on the other provisions of the terms not discussed in part 1 or part 2 of the table.

Table – Response to Franchise Agreement term

PART 1: KEY ELEMENTS TO BE PRIORITISED	
Topic	**Response**
Duration of the Franchise Agreement/ Extension of the Term	We note the Authority's requirement that the term of the Franchise Agreement is the shortest term possible to provide for satisfaction of the Second Phase Financial Plan and to allow for the transition from "ramp up" operations to a mature operational business. Based on this requirement we recommend that the term of the Franchise Agreement is based on the principles and assumptions specified and agreed with the Authority in the Second Phase Financial Plan which may include the following: • The commencement of the Term to be adjusted to take into account delays to the commencement of the Initial Operations Period including delays to the completion of the construction, testing and acceptance of track, systems and rolling stock; and • An "enhanceable" Franchise Term whereby Franchise duration could be structured on increasing term basis, for instance five year + five years + five years with the commencement of each individual five year term guaranteed when certain criteria and/or conditions were fulfilled. The approach in discussions with the Authority such as Second Phase Financing Plan projections and how quickly the franchise becomes self-financing/how revenue risk is structured.
Collection and Application of System Revenues	In agreements of this nature, the system revenues of Train Operating Companies (TOCs) are principally generated by passenger receipts, i.e. fares and other ancillary services provided to passengers such as catering and, depending on the nature of the franchise, by financial support from the relevant public agency. In some cases, the costs of operating a railroad, including the maintenance costs for track and systems and rolling stock, exceed revenues meaning that public agency support is needed, either directly to the TOC or to the infrastructure manager by grant funding or a combination of both. From discussions with the Authority we understand that the intention is that in the Second Phase, the Early Train Operator (Operator) will be expected to run train and systems operations under a short/medium term franchise without a subsidy. To this end it is anticipated that the Operator will be able to exercise a substantial degree of freedom in managing its business by concentrating on growing income and lowering costs in specific areas. The intention is that the Operator will seek to: • Maximize revenue through initiatives designed to attract passengers through a modal shift from road and airlines to high-speed rail and creation of opportunities for ancillary revenues including station development; and • Manage costs through effective management of staff and suppliers, control of key operating costs and continuous improvements in productivity. However, there are various factors that are outside of the Operator's control that may impact its ability to

	provide service that is consistent with it operating a financially robust business and generating an appropriate financial return for shareholders. These include: • CHSR is a new railroad without any established customer base and therefore the initial level of revenue and its growth patterns over the short- to medium- term are more uncertain compared to a railroad; • We note plans for CHSR to assume a role for feeder bus services bringing passengers to rail stations. If the feeder bus services are sub-optimal in terms of quality, frequency, and/or capacity, then this could have a major adverse impact on demand and revenue. This risk is likely to be particularly significant in the early years of operation. It is not clear if the Operator will have the control over the feeder bus services needed to manage this risk effectively; • Exogenous risk factors outside of the control of the Operator including levels of economic growth and employment in cities and regions served by CHSR which will impact significantly on the level of demand for its services; • The potential adverse impact of poor infrastructure and rolling stock performance on the quality of train services as a result of the underperformance of third-party suppliers/contractors impacting adversely on the level of passenger revenues; • The Operator's responsibility for recouping the Authority's administrative expenses from revenues; and • The lack of clarity on what the maintenance costs of track and systems/rolling stock would be and whether the expectation is that these costs would extend to the costs of undertaking corrective as well as preventative maintenance. We believe these issues are not insurmountable and can be easily resolved in collaboration with the Authority through the development of concepts in the Franchise Agreement which seek to incentivize the Operator to deliver the Authority's objective to operate the franchise without subsidy while at the same time ensuring the Operator makes an appropriate level of financial return in a manner that does not expose it to unmanageable risk in relation to matters outside of its effective control. Some of these concepts which we develop together with the Authority during the First Phase are as follows: • Structuring the payments during the Initial Operations Period such that payments are made in monthly periodic installments. We note that the commercial intention is that over the Franchise Term the Operator will pay to the Authority for the right to operate CHSR. However, we think that in the early years when revenue is growing but costs are substantially fixed there will be a case for payments to the Operator. The intention is that these periodic payments will be agreed for the duration of the Franchise Term as part of the Second Phase Financial Plan. The advantage of this approach is that the amounts to be paid by the Operator to the Authority or vice versa are established as part of the Second Phase Financial Plan and therefore any capital investment/initial working capital required to be in place by the Operator from

	the onset is known from the Franchise Agreement date of commencement; • Consider capping Authority administrative expenses such that the Authority bears the risk of expenses over a cap as specified in the Second Phase Financial Plan; • Consider limiting maintenance costs for track, system and rolling stock that is to be borne by the Operator in the Second Phase to only preventative maintenance; • Given that passenger revenue could be impacted by various factors outside of the control of the Operator a forecast revenue risk-sharing mechanism could be introduced whereby the Operator makes revenue share payments to the Authority or the Authority provides revenue support payments to the Operator when revenues exceed or fall below a target amount agreed in the Second Phase Financial Plan; • A process for reviewing the financial viability of the Operator could be considered whereby the Authority and the Operator can review and agree to changes to the terms of the Franchise Agreement/Second Phase Financial Plan or seek alternative funding arrangements when the financial viability of the Operator as evidenced by an independent auditor appointed by the Authority and the Operator confirms that the Operator's financial difficulties are due to circumstances beyond its control; • Authority to consider passing onto the successor operator the unamortized costs of equipment/other investments procured by the Operator in the Second Phase. This can be effected by the introduction of a residual value mechanism whereby the Authority guarantees the Operator that a Successor Operator will pay to the Operator the residual costs/values outstanding in relation to capital investments made by the Operator in relation to CHSR during the Second Phase; • A mechanism to allocate macroeconomic risk factors. A significant element of CHSR revenue is likely to be dependent on exogenous factors linked to the macro economic performance of areas served by it. Such macroeconomic factors are outside of the control of the Operator. In similar commercial circumstances this risk has been allocated so that if macroeconomic performance is less than that assumed when the Franchise Agreement was signed the Operator receives financial protection and if economic performance is better than assumed an element of the financial upside is shared with the Authority. A number of measures of macroeconomic performance can be considered including regional, state or national levels of GDP growth and the level of employment in the central business districts of key cities or regions served by the Operator—the latter being likely to be appropriate where there is a high level of "daily journey to work" commuter demand; • The development of viable financing options for CHSR such as the potential for TIFIA Loans, revenue bonds and tax-exempt bonds, as discussed below. Illustrations of some of the above concepts and how they can be adapted to suit the CHSR project are set out in the section of the Technical Proposal entitled "Examples of Risk Structure Options Across the Franchise Lifecycle.
Performance	We agree with the Authority that the Operator should commit to deliver the passenger services to a specified

Standards, Incentives and Payment Deductions	standard of performance. A failure by the Operator to comply with the specified standards or level of performance should result, depending on the level of failure, in the Operator being required to take certain actions to ensure that performance requirements are met or, in extreme circumstances, result in the occurrence of an event of default. However, given that the delivery of passenger services is dependent on other third parties such as the track and systems contractor and the rolling stock contractor and the impact of the other passenger Operator/freight users on the non-dedicated sections of CHSR we recommend the following: • The performance benchmarks do not include short formation capacity benchmarks; we do not believe that these benchmarks are appropriate in this case as high-speed trains will be formed of single fixed formation trains with there being limited ability for the Operator to deploy short formations for technical reasons; • Payment deductions, if any, are invested by the Operator on initiatives designed to improve performance. In any performance regime, there is a balance to be struck between achieving an appropriate level of financial incentives and avoiding an excessive level of financial risk to the Operator. The latter may lead to perverse incentives and consequent sub-optimal outcomes. Therefore, we suggest a cap on the maximum liability of the Operator to pay performance deductions; • The benchmarks are structured such that they only include lateness and cancellations caused by the Operator. For track and rolling stock the intention is that the Track and Systems contract and the Rolling Stock contract should include performance standards with the respective contractors incentivized to comply with the specified performance standards. For this reason, we recommend all the Track and Systems contracts, the Rolling Stock contract and the Franchise Agreement include a uniform fault attribution process which allocates performance responsibility among the relevant parties and a contractual mechanism is created between the three parties and to ensure that each party indemnifies the other for any claims or losses incurred as a consequence of the poor performance of the other, including revenue losses. If structured correctly, the contractual mechanism could also include the payment of performance bonuses to incentivize good performance; • For the use of the non-dedicated multi-user part of the network we think that a mechanism should be included in the Franchise Agreement to address circumstances where trains are delayed by other freight or passenger operators on the non-dedicated section of track, the owner of the multi-user infrastructure denies access to the Operator to the track or stations or train lines obtained by the Operator is sub-optimal. We will also expect that rules and regulations are established regarding priority on the non-dedicated multi user part of the network including priority on the occurrence of delays. • The benchmarks should hold the Operator harmless in relation to poor performance caused by the occurrence of force majeure events adversely impacting on the ability of the Operator to comply with the performance standards.

Services During the Operations Period	We note the services to be performed by the Operator during the Operations Period include the management of specified elements of the System, to be agreed with the Authority, which may require assignment to the Operator of the Authority's rights and obligations under previously executed contracts. The track and system and rolling stock contractors are key suppliers to the Operator and their performance can have a significant effect on the ability of the Operator to meet its costs and revenue projections as set out in the Second Phase Financial Plan. Accordingly, we recommend that the Operator, in its role as Early Train Operator, not only plays an advisory role in the procurement of the relevant work packages but also acts as the "Authority's Representative" for purposes of ensuring that the relevant contracts include the appropriate risk allocations and incentives. To avoid the Authority acting as a "middle man" between the Operator and the relevant contractors we recommend that any assignment of the relevant contracts includes an assignment of the relevant Authority enforcement rights and rights in relation to indemnities so that the Operator can enforce and claim directly against the relevant contractors for any act or omission or non-performance of obligations which impact on the ability of the Operator to perform its obligations or deliver the passenger services in accordance with the requirements of the Franchise Agreement. There should also be a clear delineation of maintenance responsibilities between the relevant contractors and the Operator with the maintenance obligations of the Operator, if any, being limited to preventative maintenance of the system and stations. We further note that the terms specify that the Operator may not retain train-dispatching responsibilities unless agreed to by the Authority and the Track and Systems contractor. Our view is that if the Operator does not have train dispatch responsibility on the dedicated section of route recognizing that it will not have this responsibility on the non-dedicated section it will lack control over a key aspect of the management of the passenger services with a potentially significant impact on performance.
PART 2: KEY ELEMENTS TO BE ADDED	
Operator Funding Requirements	The Operator will be a special purpose entity, which would own relatively few fixed assets at the start of the franchise and therefore will generally be expected to have modest capital requirements. Accordingly, we understand why the Authority expects the parent of the Operator, which in this context will be, DB E&C USA Inc., would be required to provide an element of parental support to the Operator including in the form of initial working capital and or investment capital for the purchase of the purchase of the equipment/systems that the Operator is required to procure under the Franchise Agreement. The form of parental support that is typically available in franchise agreements of this nature are: • The provision of a performance bond of an amount agreed by the Authority and the Operator such performance bond to be capable of being drawn down by the Authority on demand in the event of early termination of the franchise agreement following the occurrence of an event of default. The Authority will be entitled to claim from the bond the losses, costs and expenses that it incurs as a consequence of the early termination. Any amounts remaining following the settlement of such Authority losses, claims and

	expenses will be reimbursed to the Operator; • There will be an agreement between the parent of the Operator and the Authority whereby the Parent provides a facility that the Authority can require to be drawn down if the Operator's financial robustness financial ratios would otherwise be breached. If this approach is to be considered then during the First Phase the Authority and the Operator will need to agree the appropriate financial robustness financial ratios that will apply including the amount of facility plus applicable interest to be charged by the parent to the Operator for this facility.
Variations to the Franchise Agreement	We expect that the Franchise Agreement will include a mechanism for variations/adjustments to be made to the Second Phase Financial Plan and the Franchise Agreement in specified circumstances. The expectation is that these circumstances will include matters that are uncertain at the time of approval of the Second Phase Financial Plan and execution of the Franchise Agreement and which will impact on the ability of the Operator to either perform its duties under the Franchise Agreement or deliver the financial performance required by the Second Phase Financial Plan. These uncertain matters may include but are not limited to the following: • Changes in relevant law following the execution of the Franchise Agreement; • Late delivery of the track and systems and/or rolling stock resulting in delay to the commencement of the Initial Operations Period, currently anticipated in 2025; or • The cancellation of the various phases of the project or other matters such as the absence of appropriate development rights for the purposes of generating ancillary revenues, thereby impacting on the ability of the Operator to deliver the revenue projections set out in the Second Phase Financial Plan.
Compensation During Period from Execution of the Franchise Agreement to the Commence-ment of the Pre-Operations Period	The terms of the Franchise Agreement are silent on payments by the Authority to the Operator for activities undertaken between the execution of the Franchise Agreement and the satisfaction of the Conditions Precedent to the effectiveness of the Franchise Agreement ("Effectiveness CPs"). During this period, the Operator would still need to perform certain activities required for the satisfaction of the Effectiveness CPs but, as the Pre-Development Agreement terminates once the Franchise Agreement is executed and the Pre-Operations Period would only commence once the Effectiveness CPs are satisfied, there appears to be no mechanism for compensating the Operator for costs incurred during this period. Our recommendation therefore is that the Pre-Development Agreement continues to cover this period and is terminated on the date of satisfaction of the Effectiveness CPs and not the date of execution of the Franchise Agreement as currently drafted. We note that there is a cap on the value of the Pre-Development Agreement of $30 million but our expectation is that this cap is extended in the event that it is exceeded prior to the date of satisfaction of the Effectiveness CPs.
PART 3: OTHER MATTERS	
Compensation during the Pre-Operation	The terms of the Franchise Agreement specify certain activities to be performed by the Operator during the Pre-operation period. However, such services are not intrinsically linked to the payments to be made by the Authority to the Operator. Our expectation is that the Authority will, in the same way as applies under the Pre-

Period	Development Agreement, pay the Operator for all costs incurred during this period including the costs for purchasing all relevant equipment as specified in the Second Phase Financial Plan.
Changes to the Second Phase Financial Plan	As mentioned in Part 2 above as part of the variations mechanism we believe that there are certain circumstances which should automatically trigger changes to the Second Phase Financial Plan during the Initial Period. These circumstances should include the occurrence of certain events that are uncertain at the time of approval of the Second Phase Financial Plan or that are outside the reasonable control of the Operator such as changes in relevant law or delays to the anticipated commencement of the various phases of the rail services.
Passenger Train Operations	While we appreciate that the Authority should retain some approval rights in relation to the operation plan, including the minimum specification and the setting and changes to fares, our expectation is that the Authority will act reasonably in deciding whether or not to give such approval, and will not unnecessarily delay such approval, and most importantly, will still give the Operator a substantial degree of freedom to manage its business by concentrating on specific areas of income and costs that allow it to achieve the financial projections specified in the Second Phase Financial Plan.
Small Business /Disadvantaged Business Enterprise	We are committed to the Authority's goals in relation to Small Business/Disadvantaged Business Enterprises. However, our expectation is that the requirement to utilize small business/disadvantaged business enterprises will not be in relation to those aspects of operations that relate to operationally vital systems and functions including those relating to the safe operation of CHSR.
Licenses and Permits	We expect that the Franchise Agreement will only require the Operator to obtain the operational permits and licenses that are relevant for the delivery of the passenger services. We expect that the track and systems contractor(s) and the rolling stock contractor(s) will be responsible for procuring the licenses and permits for the relevant systems including certification that the track, system and rolling stock comply with applicable laws, regulations and approvals. We agree that the Authority should be able to terminate the Franchise Agreement where the Operator fails to keep in effect the required licenses or permits. However, we recommend this termination right is limited to essential operational licenses and safety related permits and for non-safety critical licenses or permits that the Operator is given the opportunity to remedy the situation failing which the Authority can then exercise the right to terminate.
Operator Change of Control	We agree with the Authority proposition as set out in the terms. However, we recommend that the terms permit the Operator to undertake intra group operator change of control where the Operator retains the same ultimate parent company – in this case the Operator will be required to notify the Authority of the intra group operator change of control.

Force Majeure	We note that the terms do not specify certain events as force majeure which are outside the control of the Operator and which we would expect to be included in franchise agreements such as: • Restriction of use of the track by the track and systems Operator or in relation to the multi-user track and stations a restriction of use imposed to such track or station by the relevant owner; • Rolling stock being taken out of service due to the rectification of an endemic/epidemic defects, or due to vandalism, fire or sabotage or collision or damage beyond repair or due to a governmental authority preventing operation on grounds of safety and this results in sufficient number of units not being available for the provision of passenger services; • A force majeure event occurs under the track and systems or rolling stock contracts which affects the Operator's ability to obtain access to track or rolling stock; and/or • A strike or industrial action by the employees of other contractor(s) such as the track and systems contractor(s)/rolling stock contractor(s); We recommend that there are conditions to the grant of Force Majeure such as notification to the Authority of the occurrence of the event within a specified period and an obligation to use reasonable endeavors to mitigate the impacts of the event with the Operator obtaining relief from the performance of its obligations once these conditions have been satisfied.
Operator Emergency Response Obligations; Suspension of Service	We note that the Authority is entitled to order the Operator to suspend all or a part of the services for any period as deemed appropriate and could treat the suspension as a termination for convenience. We recommend that if such request for suspension is for reasons not caused by the Operator then the Operator will be paid for costs incurred during period of suspension and relieved from obligations to the extent that they cannot be performed as a consequence of the suspension. On termination of the agreement then the Operator will be entitled to payment of certain costs including all costs incurred as at the date of termination and demobilization costs.
Indemnificati-on	We recommend that the Operator's liability is limited to an agreed amount and explicitly excludes liability for indirect and consequential losses to the extent permitted by law.
Intellectual Property	We recommend that intellectual property is limited to that developed specifically by Operator or a third party during the Franchise Term and utilized in the delivery of the passenger services. Our recommendation is that these rights do not extend to pre-existing proprietary intellectual property rights that are owned by an Operator related entity.

viii. Risk allocation in the franchise agreement

Identification of Key Financial and Operational Risks

The risk tables below identify key financial, commercial and operational risks to achievement of the goals and ambitions of the Authority and the Operator – specifically those that will form part of the Interim and Second Phase Financial Plans goals and ambitions:

- The first table identifies “top-level” revenue and cost risk categories and proposes general transfer, delineation of these risks and the proposed strategies, preferences and approaches to managing and mitigating the identified risks.
- The second table identifies more specific underlying risks in relation to operational and commercial development of the System, highlighting how we will propose to mitigate and / or manage these risks.

Our aim is to share with the Authority a portion of revenue and cost risks related to ramp-up and early operations of the System as much as commercially possible. As illustrated in Table below, we are prepared to share some key risks impacting Financial Plan achievement. We emphasize this as it reflects our understanding of the Authority’s goal to work with a deeply involved and committed Operator, which will support the Authority in pre-development, mobilization and early operations as a partner willing to take certain risks in order to develop the operation of the System successfully.

Table - Identification, allocation/delineation and management/mitigation of key risks

Category	Risk	Operator risk mitigation / management strategy
	Revenue deviates from financial plan projections due to exogenous demand factors	Revenue forecasting is intrinsically difficult because of the influence of exogenous factors, which is exacerbated by a new rail facility with uncertain customer demand. If the Operator is fully exposed to this risk then the Second Phase Financial Plan might not offer best value for money due to the inclusion of significant risk premia, which reduces the amount of premium that may be payable to the Authority by the Operator. Notwithstanding any risk premia the Operator might lack financial robustness if revenue is significantly less than the amount assumed giving rise to risk of Operator failure. As discussed in the Commercial Terms this risk could be mitigated through the introduction in the Franchise Agreement of a variety of revenue risk sharing mechanisms including a mechanism that assumes a particular revenue profile. If this revenue profile is not achieved on either the upside or the downside then risk is shared between the Operator and the Authority. This could mean: - If revenue is below a specified threshold the Authority takes a share of the risk, by paying a support payment to the Operator; or - If revenue is above a specified threshold the Authority obtains a share of the benefit, by receiving a share payment from the Operator. The mechanism can be calibrated with the level of revenue sharing or support increasing by reference to multiple thresholds. By moderating revenue risk the Authority can obtain a Second Phase Financial Plan and Franchise Agreement which offer overall better value and lead to the appointment of a financially robust Operator. In addition, the Authority can obtain a significant upside if revenue is better than forecast.
	Revenue deviates from	Franchise Agreement to include an appropriate performance regime which incentivizes the Operator to deliver the passenger services to a specified standard or level of performance. To be

	financial plan projections as a result of poor Operator Performance	effective such a performance regime should be designed to reward good performance and to penalize poor performance. The regime should be detailed, measured quantitatively and on the basis that includes only those aspects of the delivery of the passenger services that are within the control of the Operator.
	Revenue deviates from financial plan projections due to unexpected action or inaction in fare regulation	It is market practice for franchises of this nature that the Authority bears the risk of changes in law/changes in fares regulation. Therefore, the expectation is that the Franchise Agreement includes a mechanism that triggers a variation where a change in law occurs or there is a change in fare regulation. The Franchise Agreement could also specify that a variation may not occur where the financial impacts of the change in law or change in fares regulation is below an agreed threshold amount. The latter approach introduces some efficiency and cost control in the processing of variations.
	Cost risk related to Operator performance	We propose that cost deviations from financial plan projections due clearly to Operator performance will be primarily the Operator's responsibility, as defined in the Franchise Agreement. For instance, if the Operator incurs higher labor costs than projected for employees that are its own responsibility, resulting in higher operating costs, then these costs would primarily be the Operator's responsibility, subject to the discussion of inflation below and change in law provision as described above.
	Cost risk related to uncontrolled interfaces with other arrangements directly related to the System	The degree to which cost deviations from financial projections caused by other contracts related to operation of the System (e.g. rolling stock supply and maintenance, track and systems supply-installation and maintenance, civil works but also e.g. how feeder services are run, how multi-use track sections are managed) could be absorbed by the Operator depends on the extent of upfront input and operational control the Operator will have over these arrangements. We suggest that the Franchise Agreement would incorporate specific parameters delineating how impacts of such external arrangements are attributed to either Operator risk or Authority risk. Protocols for cooperation and coordination between Operator and e.g. Infrastructure/Network Provider could be included in the respective contracts.
	Cost risk related to inflation of input prices	We propose that the Franchise Agreement would include mechanisms delineating the extent that price inflation risk would be managed and delineated between Operator and Authority. Notably this would be done through a mechanism providing indexation of fare levels and other non-passenger receipts foreseen in the Franchise Agreement. We will work with the Authority to develop fare indexation principles that will work in the System's regulatory context (i.e. which are legally and practically feasible given how decisions setting maximum fares and similar parameters will be taken and administered) and which reflect the inflation of input prices for Operator costs.

As indicated above, in order to manage and mitigate certain risks to financial plan realization—in terms of commercial success, projected margins and returns, and period-to-period cash flow needs and liquidity position—we envision a number of possible concepts. We developed these further in the following section from examples of risk structuring across the franchise lifecycle. In the table below, we identify a set of important operational risks and uncertainties.

Table - Experience-based management//mitigation of key operational and commercial risks

Risk	Operator risk mitigation / management strategy
Delay of commissioning due to new safety regulations, Authority	The implementation of a new safety related control system may be required amd consequential process for implementing applicable rules and regulations and obtaining the required certificates may create delays. Risk mitigation includes adequate time buffer and Authority early outreach to respective regulatory authorities.
Delay of commissioning due to regulatory framework, supplier	Early involvement of all relevant regulatory bodies, stakeholders and authorities in the processes of project development and application of operational and safety certificates.
Product liability for HSR	A two pillar strategy will be followed: - Legal safeguarding of the whole highs-speed system by compliance with all relevant federal and state-wide regulations - Ensuring highest safety standards in the whole system by composition of safety and quality management from DB and US partners ACI and HDR.
Grade crossing in mixed operation segments	The basic strategy for counties, municipalities, the infrastructure manager and the TOC should be to remove grade crossings over time. In parallel the existing crossings have to be equipped with best available safety systems including radar scanners for obstacle detection. Additionally, measures such as oversized traffic signs or safety training in schools can be helpful and will establish a base level of safety awareness.
Mixed operations risk (delay, etc.)	With an enhanced operations and infrastructure planning with synchronous simulations a sufficient balance between infrastructure provision and used capacity can be reached at an early stage. As an ongoing process the timetable planning process needs to be coordinated and regulated between all affected parties for getting detailed, fair and reasonable planned timetables. Last not least the development of the dispatching process is very important. For achieving these goals an early involvement of all parties and the creation of a long-term partnership is crucial.
Transport integration problems with	Early involvement of local agencies and operators, involvement of DB experts for creation of understanding of benefits, study tour to Germany for local key persons, strong collaboration of CHSR as facilitator of the integration topic for public transport sector in California.

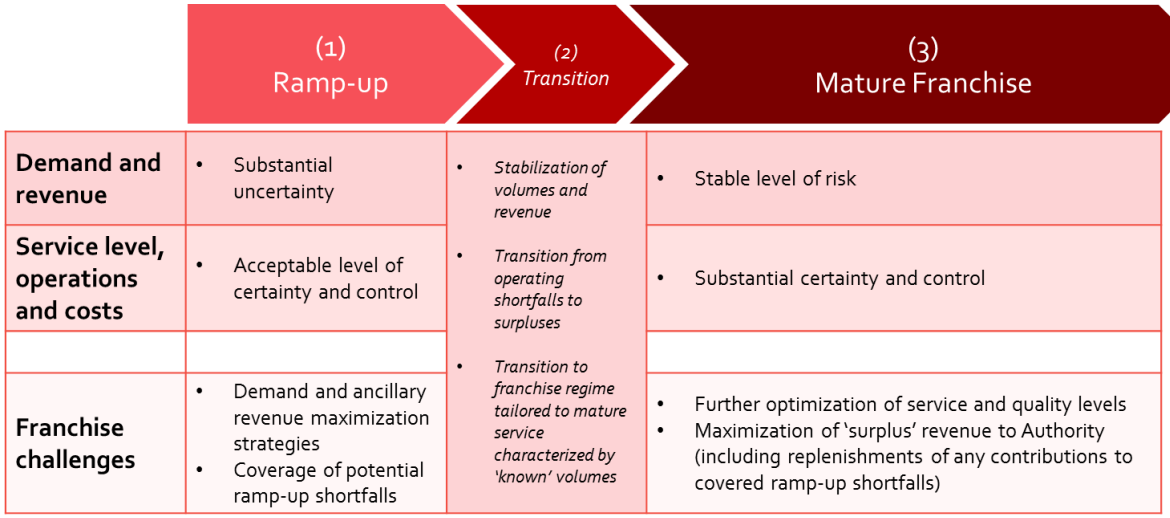
agencies and operators	
Unclear interface, interdependencies to maintenance contractors	Extensive and detailed advice for CHSR regarding the two big procurement packages shall lead to strong and clear contract between all involved parties: supplier/maintainer, Authority and Operator with explicit responsibilities, interfaces and respective key performance indicators (KPI's).
Delay in LA extension	Evident and important risk for expected revenue stream, unable to cover from Operator side. Effective project progress and early success of the first operational phase will help to overcome decision making problems.
Operations interruptions due to natural disaster or force majeure (e.g. earthquake)	Adequate design of all parts of the System will minimize damages; comprehensive and detailed emergency plans will facilitate rescue work.
Delay in SF-Downtown services (Caltrain corridor east upgrade)	In these complex environs with many stakeholders involved a flexible and target-oriented approach will be necessary. First assessment of the operational situation shows that several variants will be possible for using the Caltrain corridor. Mixed operations can be achieved with selective upgrade measures. Since reaching Transbay Terminal in first years of operations is not mandatory, an upgrade at 4th/King will be sufficient for the initial phase.
Feeder bus system	Volume and configuration of feeder bus systems for different usage cases to define, Gilroy / Madera services will be important for increasing commuter traffic, Bakersfield to LA is completing the rail service at a minimum level. Early involvement of local stakeholders and use of DB public transport expertise will help to come to the demanded concepts.

Examples of risk structure options across the franchise lifecycle

We have proposed several concepts in the commercial terms section of the Technical Proposal for further discussion and elaboration in partnership with the Authority. For illustration purposes only, we have set out below specific examples on how some of these concepts could be applied in the context of CHSR. We have organized these concepts according to the below three distinct stages in the ramp-up and stabilization of the initial operations:

- Ramp-up;
- Transition from ramp-up to mature franchise; and
- Mature franchise.

Figure - Stages in financial and commercial development of franchise



We take this staged approach to risk structuring in order to underline our expectation of major changes in the financial and commercial characteristics of the franchise between different stages, as well as to introduce concepts that will enable the Authority and the Operator to work together in order to meet the specific challenges of each stage. We are aware that the Authority wishes to enter into a franchise for the shortest term possible subject to achievement of stable and mature operations and financial plan goals and ambitions; hence the Early Train Operator would not necessarily be a party in the more mature stage of the operations. We nevertheless reflect on a mature franchise situation as well, (a) because this highlights the differences between ramp-up and mature franchise circumstances as well as different risk structures that work best in different circumstances, and (b) because it enables us to illustrate how we recommend that key requirements with regard to the Authority's stated goals of no-subsidy and sharing of revenue-risk are met across the lifecycle of the CHSR service development – with specific attention to the very likely challenges of early operations.

Uncertainty and liquidity during ramp-up

Table below elaborates the characteristics and challenges of commencement of operations and ramp-up following completion of all testing and acceptance proceedings.

Table - Ramp-up, characteristics and challenges

Demand and revenue	Service level, operations and cost	Franchise challenges
The pace and scale of pick-up of initial demand and hence fare revenue levels	Under the Pre-Development Agreement we aspire to contribute to the realization and/or development of	Considering demand, revenue and operational characteristics, the principles of the Franchise Agreement will in this stage need to strike a careful balance between the following two considerations: Supporting initial system shortfalls: The Operator may provide specified

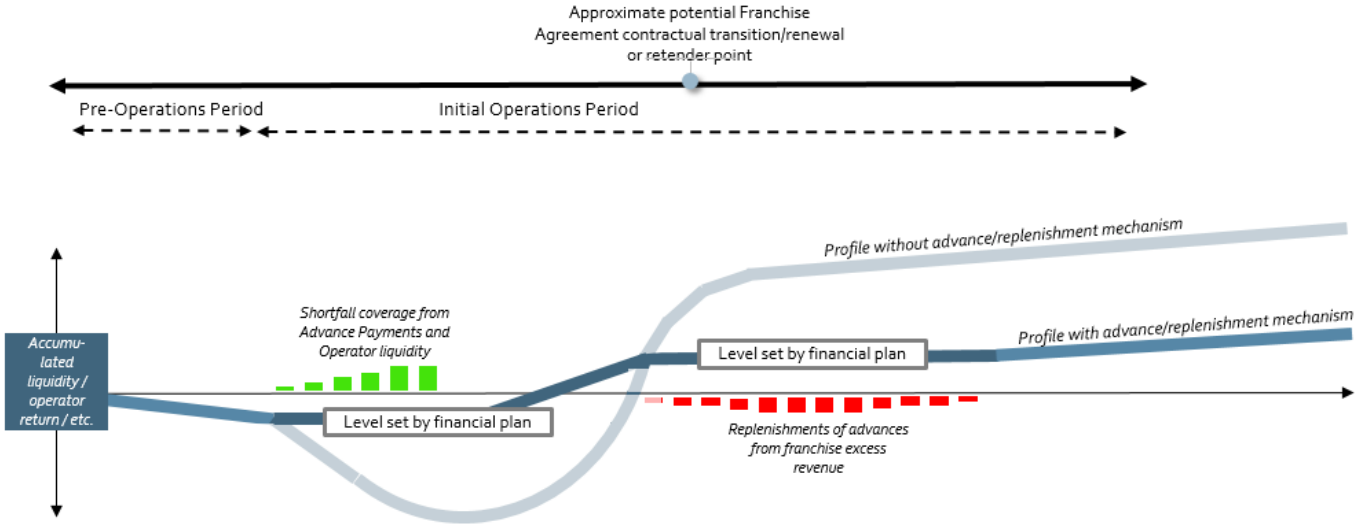
will be uncertain and contingent on a substantial number of factors we presume to be outside the span of control of the Operator (adequacy of feeder links, behavioral changes of travelers, calibration of pricing, response from competing transport Operators in aviation, etc.).	procurement of tracks and systems, rolling stock, service planning, etc. Hence, we believe that at the start of ramp-up, we would be able to define a Second Phase Financial Plan that substantially reflects the projected costs at given service levels. Our experience and capabilities in HSR operations will ensure delivery according to operational and cost projections.	level of capital at risk related to initial shortfalls in partnership with the Authority. The Operator's ability to provide such capital and the amount will reflect the level of uncertainties in this stage, the robustness of transition principles included in the Initial Franchise Agreement, discussed below, as well the sufficiency of the term of the Franchise to recoup such investment. Therefore, a mechanism for "**advancing" initial shortfalls** needs to be structured. Ensuring a growing service, turning around shortfalls: When considering support mechanisms to cover initial shortfalls we expect the Authority will focus on ensuring that the Operator remains incentivized to provide optimal service and thereby reduce and finally turn around initial shortfalls. We expect that a ramp-up performance mechanism will be included which monitors specific ramp-up service performance and links it to realization or discounting of Operator returns as projected in the Second Phase Financial Plan. Again, the terms of such a mechanism need to consider the level of risk that the Operator will be taking on.

Figure below illustrates a *conceptual* solution to the financial and commercial challenges of ramp-up. The Franchise would incorporate Ramp-Up Advance Payments (Advance Payments) from an external source that ensure partial coverage of expected and unexpected initial shortfalls, with the Operator expected to commit a specified capital amount pre-determined by the Second Phase Financial Plan, taking into consideration risk levels, the adequacy of expected returns and the length of the Franchise Term. The other sources of funds from which to draw these Payments could be the Authority's own funds or other sources. We are very aware of the potential challenge of availability of funding for this purpose. Below, we discuss several suggestions on developing and structuring such other sources, in which the Operator could support the Authority during the Pre-Development Stage.

Advance Payments would be a function of (a) requirements as projected by the Second Phase Financial Plan and (b) differences between a reference revenue level and realized passenger and other receipts as set forth in the Second Phase Financial Plan. They would later on be replenished from a share of revenue in excess of a certain level set by the Second Phase Financial Plans.

During ramp-up and per the Franchise Agreement, the Authority would have specific performance metrics and standards at its disposal to ensure the Operator continues to be incentivized to provide quality service and undertake other requirements necessary to grow ridership. Performance below these standards may result in direct financial impacts in specific reporting periods and/or may impact Franchise transition as described in the following section.

Figure - Shortfall coverage & replenishment across franchise lifecycle (visual representation is conceptual and not to scalpel)



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To accommodate transition from ramp-up to mature operations, the Franchise Agreement may include a trigger point at which the Authority would have the option to discontinue the Operator's franchise and re-tender or recalibrate the arrangement at its own discretion. This transition could be coupled with a transition in "franchise liquidity" from requiring advances to producing surpluses. Such a termination provision without an event of default would need to consider compensation to the Operator for costs and loss of profit at prescribed thresholds. Such a termination provision could be available to the Authority going forward as well carried out in conjunction with or independent of periodic review of the financial viability of the Operator. As is market standard, such termination provisions would also allow the Operator to terminate the Franchise Agreement without the occurrence of an event of default.

We emphasize that these are all conceptual and proposed as options for further deliberation; we will strive to work closely together with the Authority to develop these further as we elaborate the terms and conditions of the Franchise Agreement.

Origination and structuring of solutions to cover initial shortfalls

We propose that we would take a proactive role in supporting the Authority to originate and structure funding/finance sources from which it could draw the necessary liquidity, working closely with the Authority and other relevant state and federal agencies. These potential funding / finance solutions are discussed below.

Our team is well experienced with some of the leading financing mechanisms that may be appropriate for addressing the funding of the Ramp-Up. Team member Rebel has worked extensively with the US Department of Transportation's (US DOT) Transportation Infrastructure Financing and Innovation Act (TIFIA) and Railroad Rehabilitation and Improvement Financing (RRIF), two "innovative financing" programs that have financed many of the major highway, rail, and transit projects in the US. This has included financing $5.7B of Los Angeles County Metropolitan Transportation Authority's light rail extensions, $1.4B financings for Chicago Transit Authority (CTA) stations, rail cars and track improvements by a pledge of fare box revenues, and financings for toll roads Riverside, San Bernardino, and San Diego Counties in California. These loan programs' goals are to provide low-cost and flexible financing recognizing the start-up challenges of projects like CHSR.

Both programs offer to capitalize interest during construction for up to five years and during the first five years of operations. These programs are primarily intended to finance major infrastructure, which in the case of rail or transit, includes right-of-way acquisition, civil works, vehicles, and vehicle control systems. If the Operator requires certain equipment for operations, including IT software and equipment, office equipment, and fare technology, it is highly likely that this will be eligible for TIFIA or RRIF financing, as long as the equipment meets the programs' eligibility criteria and, in the case of TIFIA, that the project being financed is at least $50M.

Most importantly, TIFIA or RRIF may be able to finance ramp up costs, as it has in a recent California transaction for the I-15 toll road in Riverside County. Essentially if these ramp-up costs are well identified in the ridership projections, are common to other facilities worldwide, and cover a specific period of time, TIFIA or RRIF may be able to finance them. Key eligibility criteria will likely include that this Ramp Up is not seen as a way to finance operations and maintenance expenses, that the repayment stream for the respective loans is investment grade (i.e. rated BBB- or higher on the Standard & Poor's scale), that the CSHR project meets federal guidelines, including Buy America, National Environmental Policy Act (NEPA), and prevailing wage requirements, among others. Furthermore, TIFIA or RRIF needs to be comfortable with the overall risks of the CHSR project and the policy benefits. We expect that the most important financing challenge with these programs will be to demonstrate the quality of the future cash flows and how much "coverage" these cash flows have above debt service payments. TIFIA has taken "fare box" risk in three loans recently for the Chicago Transit Authority, for projects totaling $1.4B, as mentioned above.

TIFIA and/or RRIF financing could be complemented by other more traditional financing mechanisms, such as private activity bonds (PABs). These are bonds that are issued in the capital markets to retail investors and have very similar characteristics of tax-exempt municipal bonds, yet they are issued at higher effective interest rates due to alternative minimum tax considerations. PABs could be issued as senior debt along with TIFIA or RRIF at a subordinate level with the approval of the US DOT. PABs, however, need to clearly be investment grade, unlike TIFIA or RRIF, which is a higher standard and often requires a "backstop" from a creditworthy source because of the financial market's conservatism towards start-up activity forecasts. Another potential complementary financing source could come in the form of private equity funds. There are numerous funds have been established in the US that would consider this type of opportunity if it were well structured, it was of adequate size, and that major risks could be mitigated. One of many options would be deeply subordinated debt that would be positioned between more senior debt PABs, TIFIA or RRIF debt and the Operator's specific equity contribution. Some of the major California pension funds, including California Public Employees' Retirement System (CalPERS) and California State Teachers' Retirement System (CALSTRS) have invested in these funds, some of which have invested in California projects, such as the Presidio Parkway. A further complementary source could be financing from a California investor that shares in the public policy benefits of building the CHSR project and therefore is willing to receive a below-market return for providing debt or equity.

We look forward to exploring all of these options with the Authority and supporting its efforts to develop a robust financial plan.

Conceptual mechanism for transition from ramp-up to mature franchise

Table below describes the characteristics and challenges of the transition to a mature franchise situation. As described we are aware that the "shortest term possible" goal of the Authority may imply that the initial franchise will end at some point when this transition occurs.

Table – Transition from ramp-up to mature franchise, characteristics and challenges

Demand and revenue	Service level, operations and cost	Franchise challenges
Demand and revenue have achieved stable levels and can be further surveyed and included in a revision of the Operator's and Authority's financial business planning. Demand forecast models can be updated to produce forecasts within substantially narrower bandwidths, producing more reliable projections upon which to base franchise financial planning going forward.	Based on our capabilities in HSR operations, based on the Initial Financial Plan as well as based on data from the ramp-up phase, we believe we will continue to be able to project and control costs at given service levels.	The initial Franchise Agreement term will need to incorporate a mechanism that ensures the shortest possible Franchise Agreement, in line with the Authority's stated requirement in the RFP, while ensuring a successful transition to stable and mature operations as well as sufficient achievement of Financial Plan goals. The manner in which the achieved financial results of the Operator are structured and managed through mechanisms in the contract will drive the extent to which it is able to absorb initial shortfalls and other funding/capital requirements, as this will drive how the Operator's initial capital contributions and financing raised would be put at risk. Such mechanisms will therefore need to consider the following: • Duration of the franchise; • Maturity and financial stability of the franchise; • Operator performance that moves towards a mature and financially stable state of franchise; and • Operator's ability to put some level of capital/finance at risk and therewith to have "skin in the game."

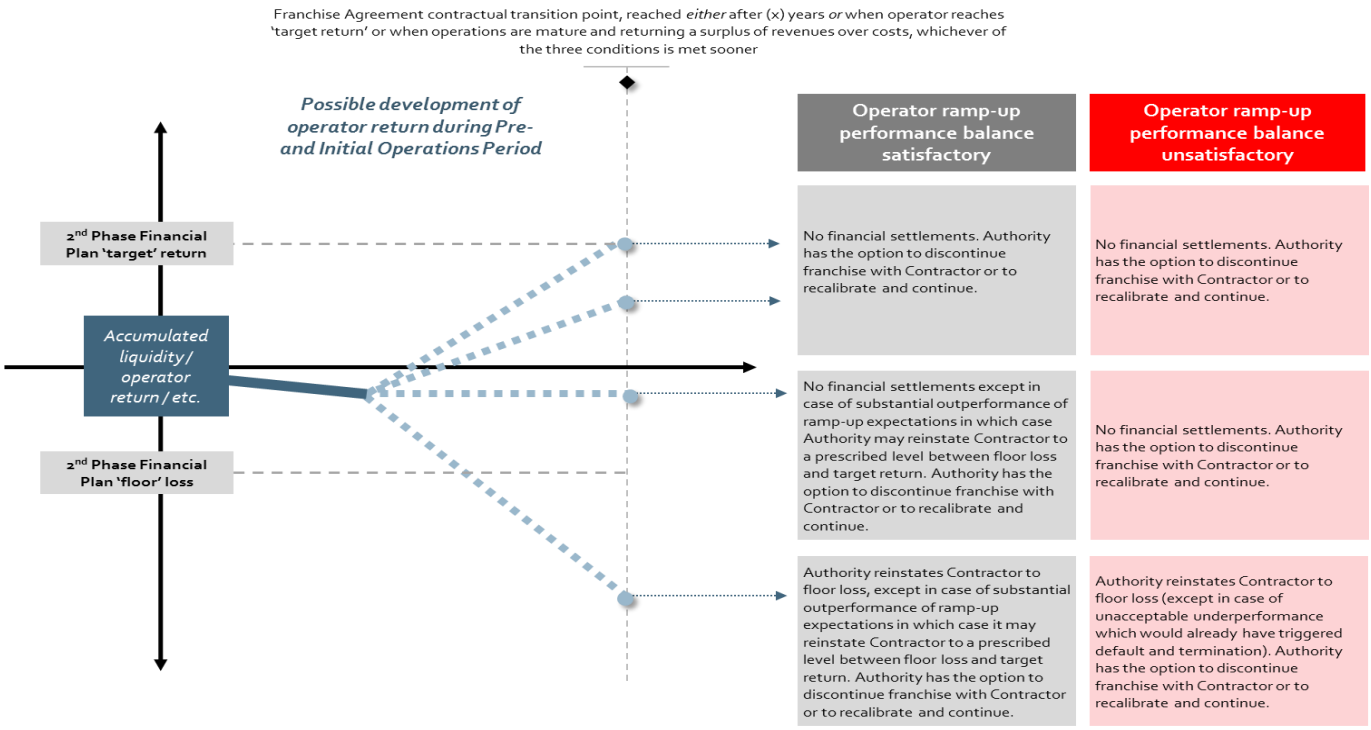
Table below illustrates a conceptual mechanism describing some of the challenges and requirements highlighted for the transition from ramp-up to mature franchise operations. The mechanism is based on "target return" and "floor loss" levels, a contractual transition mechanism from ramp-up to mature services and specific terms and conditions which serve to structure the incentives and financial exposure of the Operator:

- "Target return" and "floor loss": The financial projections of the Second Phase Financial Plan will incorporate defined target return and floor loss levels reflecting potential financial outcomes for the Operator at the end, or transition point, of the Franchise Agreement. These can be operationalized as accumulated net revenue, achieved IRR, achieved gross margin, or comparable metrics, and tracked in the regularly updated business plan and operational financial model accordingly.
- Point of transition from ramp-up to mature services: The Franchise Agreement would prescribe a transition point to be triggered either after a set number of years, after the achievement by the Operator of its target return or once the operations are considered mature and turning surplus revenues over costs, whichever state is realized earlier.
- Structure for the incentives and financial exposure of the Operator: The transition mechanism will also need to reflect the balance that we described as necessary for the franchise ramp-

up stage: between the Operator's financial outcome and its incentives to maximize and accelerate system-up and development. While this structure clearly links financial/return outcomes to target return and floor loss, it therefore also uses Operator performance according to specific ramp-up performance requirements as a key factor determining the Operator's final commercial outcome.

The resulting mechanism addresses the Authority's goal for a relatively early transition incorporated into a contractual solution. It puts forward the concept of financial transition settlements between Operator and Authority, but strictly *according to* the financial balance of operations up to that point as well as the specific performance record of the Operator up to that point. Transition may include several options, including 1) franchise renewal, 2) transition to a new franchise regime but retaining the same Operator or 3) retendering following resolution/settlement with the Early Train Operator, in line with the concept of an enhanceable Franchise Term. The Authority may also opt to include automatic extensions or periodic reviews related to performance goals, targets for passenger numbers, or other performance measures. In the event the Operator is not selected for the subsequent franchise(s), we suggest including provisions passing onto the successor operator the unamortized costs of equipment and other Operator investments and/or Authority compensation to the Operator for lost costs and profit as discussed above. This can be affected through a residual value mechanism or similar approaches.

Figure – Conceptual mechanism for managing the transition from ramp-up to mature franchise service



Continued robust performance across mature franchise

Table below highlights the characteristics of the franchise in a mature franchise service situation. At this stage, we assume it is at least possible that the Authority has put in place more than one franchise for operations on different sections or service patterns of the System.

Table – Mature franchise, characteristics and challenges

Demand and revenue	Service level, operations and cost	Franchise challenges
Demand and revenue continue to show stable levels, with calibration for additions of new sections of the System, which have been included in a revision of the Operator's and Authority's financial business planning and franchise agreement. Demand forecast models are regularly updated to produce forecasts within given bandwidths, producing reliable projections upon which to base franchise financial planning, revenue projections modeling, going forward.	Experience and capabilities in HSR operations continue to be essential for the proper roll-out of the System to new sections. Addition of new services which may include cost control and realization of cost efficiencies. The Authority's proactiveness in involving the Operator in further development of the System, such as it undertakes under this Pre-Development Agreement, continues to be a significant success factor.	Franchise challenges in the mature franchise state are: • Ensuring stable finances as the System is extended to allow; • Optimizing the franchise mechanism to successfully transfer a degree of ridership and revenue risk to the Operator(s) as is feasible in order to continue to incentivize performance and service improvements; and • Replenishing from operating surpluses of ramp-up liquidity provided by/through the Authority during the early phases to meet the Authority's no-subsidy requirement.

In the franchise' more mature stage, revenue upside and downside compared to Financial Plan reference projections could be shared between Authority and Operator using well-established mechanisms developed in other jurisdictions. We highlight two such potential mechanisms:

- A form of revenue share/support: comprising increasing degrees of upside and downside sharing between Operator and Authority if actuals deviate from Financial Plan reference projections beyond a certain bandwidth (e.g. in an example of a relatively narrow bandwidth for revenue risk sharing between Operator and Authority: 80/20% sharing in case of 0-5% deviation, 60/40% sharing in case of 5-10% deviation, and 20/80% sharing in case of more than 10% deviation); or
- A form of sharing economic risk: more advanced than direct revenue share/support structures, this would involve establishment of a linkage between national, regional and local economic development and ridership/revenue, and establishment of a mechanism in the Franchise Agreement to adjust revenues upward or downward if actual economic development metrics deviate from defined economic baseline projections.

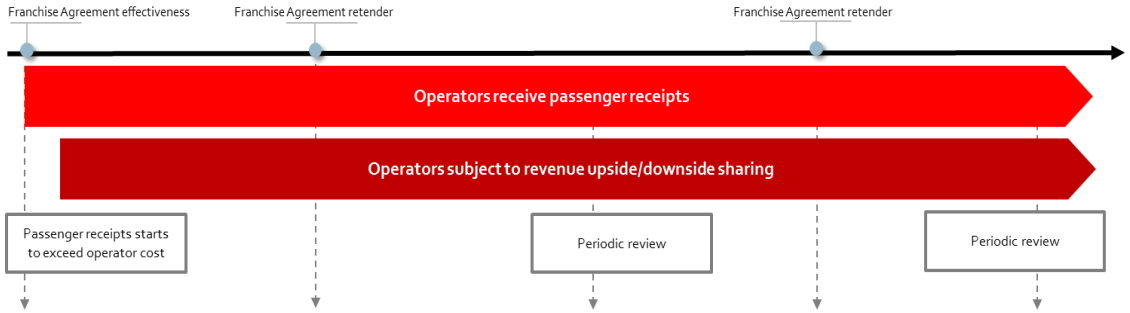
It is our intention that the Operator would retain the majority share of cost and performance risks, for those risks that it can manage. We also emphasize that incorporation into Financial Plan and Franchise Agreement of sharing mechanisms linked to reference projections would allow the Authority to recover any Ramp-Up Advance Payments made to the Operator in the initial operations period, helping to satisfy requirement that the System should not require subsidy.

Taking the long view: possible visions on risk structuring across franchise lifecycle

As confirmed above, we are aware of the Authority's goal to limit the term of the Early Train Operator franchise. We believe very strongly that taking such a longer-term view of the

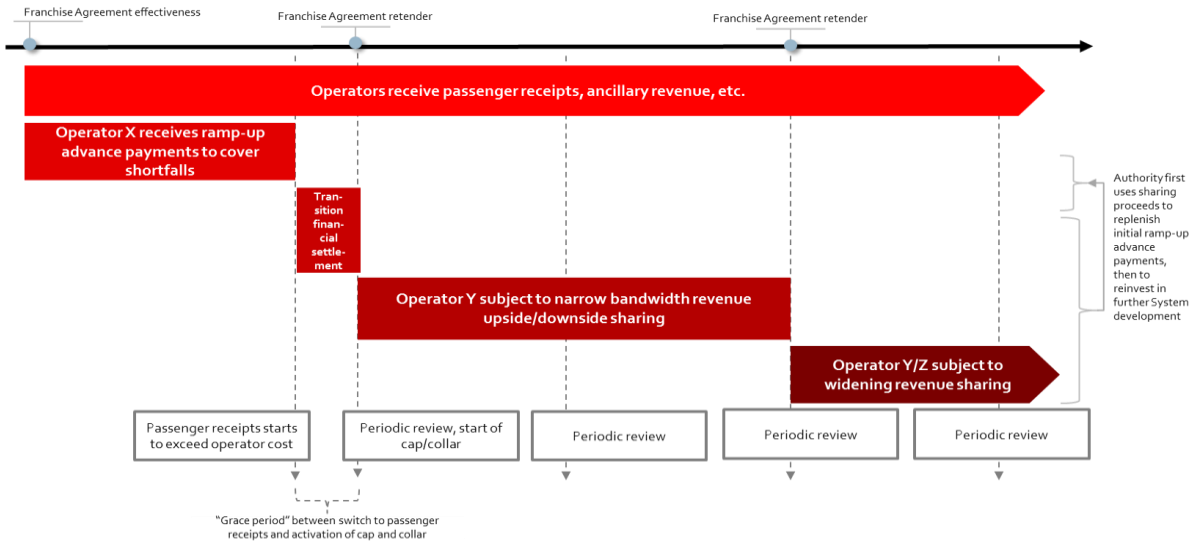
development of the franchise will help the Authority to structure ramp-up and transition to stable and sustainable operations successfully, meeting the Operator's long-term goals of financial sustainability, operationally mature service provision and no-subsidy. We believe that the Early Train Operator should be concerned with ramp-up and successful transition to longer-term development of the System, as early as the pre-development phase of the Franchise.

Figure - Franchise lifecycle risks structuring: rapid-ramp up variance



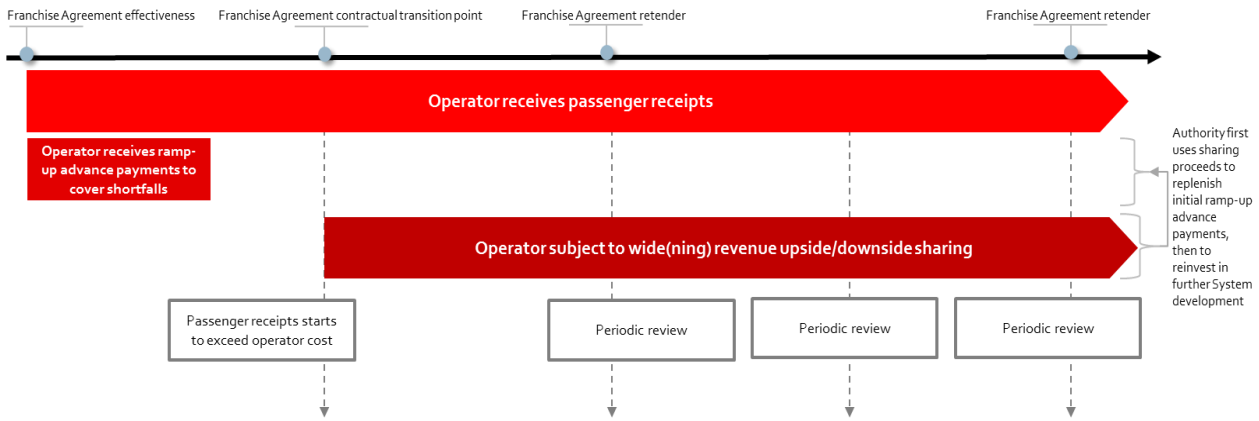
To this end it is important to develop a thorough understanding of ramp-up uncertainties and projections during the coming years and translate these into specific franchise agreement terms and conditions. A certain, rapid and financially robust ramp-up (see Figure) would translate into a different contractual solution from a slower and more contingent ramp-up of operations and ridership (see Figure and Figure). In the former case the basis of the Franchise revenue model would be passenger receipts, augmented by ancillary revenue where possible, and the Franchise could support revenue upside / downside sharing early on. In the latter case as for example shown below, some form of expected shortfall coverage would be needed to support the Franchise during ramp-up. Funds used for shortfall coverage could subsequently be replenished through revenue baseline and upside / downside sharing mechanisms as included in the Franchise Agreement.

Figure – Franchise lifecycle risks structuring: slower and less certain ramp-up variant



Further uncertain and lengthy ramp-up projections would again warrant a different approach to risk structuring in the Franchise Agreement, as illustrated in Figure below, e.g. with more extensive provisions for shortfall coverage, a grace period between shortfall and revenue sharing periods, and an initially more controlled form of revenue risk sharing with bandwidths widening over time. The DB team is committed to working with the Authority as partners to clarify and improve on these concepts further and to make sure that we develop them into robust and workable solutions that ensure healthy long-term financial performance of the System.

Figure - Franchise lifecycle risks structuring: long and initially slow ramp-variant



3 Small Business Utilization Plan

SBE Program Introduction:

DB's approach to teaming with SBE/DBE/DVBE (SB) firms goes beyond just meeting minimum requirements and is committed to achieving an aggressive 30% SB participation goal by providing meaningful roles to our partners. To underscore this commitment, we have engaged Pendergast Consulting Group (PCG) to develop and execute a robust SB Program. Mr. Paul Pendergast will serve as DB's Small Business Program Manager. PCG has produced award-winning SBE Utilization Programs that have met/exceeded the SB participation goals for major California projects such as the Transbay Transit Center, Presidio Parkway, and the University of California Merced 2020 Expansion Project.

Creating Opportunities/Building Economic Success for California's SBE/DBE/DVBEs:

First Phase: PCG has already worked with DB to assist in identifying scopes of work and the identification of SB firms in relation to First Phase, as well as Second Phase. As a result of proactive solicitation of SB participants, DB has selected the following SB subconsultants listed in the table below, to complement the DB team for specific work elements in First Phase.

Scope	Firm	Contact	SB Type	%*
SB Program Management	Pendergast Consulting Group	Paul Pendergast	SBE	4%
SB Program Reporting	KL Bartlett Consulting	Karen Bartlett	DBE	1%
Marketing and Branding	Sagent Marketing	Anne Staines	DBE	5%
Stations Design	FMG Architects	Claudia Guadagne	DBE	5%
Fare Collection	Acumen Building Enterprise	Walter Allen	DBE	4%
Vehicles, Systems, FTA Regulations	Raul V. Bravo + Associates	Raul Bravo	DBE	5%
Safety Plan and Ops; Signaling	B&G Transportation Group	James Brown	SBE	3%
Emergency and Safety Procedures, Environmental Compliance	Soar Environmental Consulting	Patrick Sauls	DVBE	3%

*anticipated contract value in percent for Phase 1

Second Phase: Many of the firms listed above will continue to provide services for Second Phase work. In addition, DB's preliminary evaluation of potential Second Phase SB opportunities include services in the major areas of ***Janitorial.*** Additional scopes of work will be identified as the Second Phase services are further refined during the Franchise Agreement negotiations phase. DB's plan, discussed in the next section, will be implemented for further identification and engagement of additional subconsultants in First Phase, and in particular Second Phase.

SBE Program Overview:

In order to meet the Authority's 30% SB goal (inclusive of SBE, DBE and DVBEs), DB's Small Business Utilization Plan consists of four elements:

1: Contract Analysis and Opportunity Detection
2: Information Acquisition and Database Management
3: Outreach, Education, and Technical Assistance
4: Monitoring, Tracking, and Reporting

These elements will achieve the following:

- Maximize participation by SBE/DBE/DVBE firms;
- Implementation of best practices, consistent with US and California's Civil Rights and Equal Opportunity laws;
- Implementation of the SB Program in accordance with applicable State and Federal laws;
- Confirm that only firms that fully meet Government Code 14837, Military, and Veterans Code 999 and 49 CFR Part 26 eligibility standards are permitted to be counted toward the goals;
- Assist with resolution of any potential barriers or conflict of interest to facilitate participation.

1. Contract Analysis and Opportunity Detection

The scope of work will be analyzed and broken down into smaller units or scopes of work that can identify specific skills, capabilities, and resources needed. These smaller units of scopes of work will provide early detection of opportunities to actively solicit and engage additional SB firms. This will remove barriers for participation, and assist in the development of existing SB firms with meaningful opportunities that are within their range of resources and capabilities. Early opportunity detection provides DB the ability to evaluate a number of utilization strategies to meet the participation goals of the contract, provide maximum practical opportunities for SB firms, leverage SB firms skills based upon their capabilities, all while meeting Commercially Useful Function (CUF) requirements to ensure best practices are implemented, consistent with Civil Rights and Equal Opportunity laws.

2. Information Acquisition and Database Management

The acquisition of information relating to interested and qualified SB firms, and the management of that information, will be vital to the achievement of SB Goals. DB will utilize the State of California and Federal agency databases to identify and contact certified (and certifiable) firms that meet the requirements. In addition to State and Federal databases, information will be acquired from cities, counties, and regional agencies in the project footprint as well as special interest and community groups. A project specific website will be created to provide innovative technical assistance to SB firms as a single source where a variety of relevant and pertinent information will be hosted. The types of information hosted on the website will include, but not limited to:

- Contact directory of DB's project personnel;
- Look ahead report of upcoming contract opportunities;
- Listing of awarded contracts with contract and contact information;
- Expression of Interest Forms (EIF's) for interested firms to complete electronically that will provide DB with vital information from each firm;
- A searchable database of SB firms who have completed the EIF;
- Prequalification requirement information and forms for firms to complete electronically;
- A searchable database of SB firms whose pre-qualifications have been approved;
- Technical Assistance Request (TAR) forms for SB firms seeking assistance;
- Information and URL link to approved certifying agencies;
- Performance/Utilization reports on SB participation (awarded, billed, and paid);

Ancillary to the databases and software that will identify certified firms and their Expressions of Interest and performance, DB will utilize additional software that tracks email outreach blasts and communications and can provide detailed information regarding the number of times the email was accessed or opened and what date and time. This verification capability will provide additional documentation on good faith efforts as well as provide statistical information that will be used to provide continuous improvement procedures and processes.

3. Outreach, Education, Technical Assistance, and Training

Another critical component will include an outreach, education and technical assistance program for interested SB firms. The Authority's project provides the Central and Silicon Valley regions with tremendous economic growth potential and as such must be able to effectively communicate to the regional workforce regarding the contract opportunities available in First Phase and Second Phase of this contract.

DB will actively participate in relevant Authority Outreach events. In addition, DB can produce and execute contract opportunity specific outreach events (specifically for Second Phase services) in order to engage with interested SB firms. DB will provide innovative, forward thinking and highly interactive Technical Assistance and Training under this contract. In particular, DB will work in conjunction with the Authority and with select SB firms to explore, identify, and resolve any potential Conflict of Interest issues.

4. Monitoring, Tracking and Reporting:

The performance of the DB SB program will be monitored to ensure compliance with the project's SB participation goals. Monitoring will be conducted on a variety of performance metrics to ensure best management practices (BMP) during the project. The monitoring and tracking of these performance metrics and BMP's will be reported on a monthly basis. Metrics of participation and performance that do not meet performance goals will be addressed through corrective actions. The implemented corrective actions will be monitored, tracked, and reported in accordance with all Authority guidelines. Knowing that tracking, monitoring, and reporting of SB participation is a critical element of the program, DB will also retain the services of KL Bartlett Consulting. Karen Bartlett has produced SB participation reports for numerous Federal, State and Locally funded projects.

Cost Proposal

1 Cost Proposal Narrative

The basis for any cost proposal is to understanding and/or defining the tasks to be completed followed by a schedule or time line to complete those tasks. DB has defined the tasks to be completed in the first year based on the descriptions and expectations contained in the ETO RFP for the First Phase.

As the ETO, DB will provide field proven advice, concepts tools and processes in supporting the Authority in development of all aspects of designing, procuring, building and operating an integrated High Speed Rail System. This will be accomplished through general consulting and advising, as well as, specific deliverables.

General Consulting:

- Mobilize the Key Personnel at NTP and assume they will be full time on site at the Authority's offices in Sacramento for the first 12 months of Phase One
- In close coordination with the Authority, DB will define priorities of tasks, meeting schedules, milestones and expectations for the following 12 months
- Support and advise the Authority in the following, but not limited to, areas of system development: Systems and Rolling Stock Sizing, designs and Procurement, Passenger Station Designs, interface and coordination with other transit agencies, municipalities and transit service providers in the development of a statewide integrated passenger transit system and ancillary revenue development to name a few.
- Based on the tasks included in the Annual Work Plan as specified by the Authority, develop specific definition of scopes of work for exclusive subcontractors HDR, and Alternate Concepts, for the SBE subcontractors.

Specific First Phase Year One Key Deliverables:

1. Mobilization Plan for the First Phase -30 days after NTP
2. Calculation of ridership and passenger revenue forecasts and analysis of impact on the financial plan – Q4 of the first year of the First Phase

Preliminary work on Key Deliverables that will be due after the first 12 months of the First Phase:

3. Integration Plan for State Wide Rail Service
4. Interim Financial Plan for the System
5. Formal Concurrence on procurement processes and documents
9. Plan to Market and Brand the System

Resource Loading The Schedule Tasks

Key Personnel: Our approach to resource loading the tasks (adding man hour estimates) is straightforward. For the Key Personnel, we expect all Four employees to be located in Sacramento metro area and ready to work on or before the NTP is issued. The hourly rates are cost based with reasonable mark ups for indirect expenses and labor rates for work performed for other agencies internationally. For the four Key Personnel, we assumed they will be full time

for the first year and each successive year as well. The Key Personnel may work on other specific task orders but will their hours will not be included in those task orders since they are already covered under the general Key Personnel task order. DB has provided labor rates for the 6 year period of the First Phase that includes an annual escalation of 3.5% per year for inflation and other escalation factors from years 2 through 6.

Key Deliverables:
The Key Deliverables that are due to be completed in the First Phase as well as work on ones to be delivered in later phases will be produced with support from both ACI and HDR. Both firms will support most if not all of the task order work for several reasons;

1. They have a significant experience in and an understanding of the US passenger transit and railroad industry and market standards, methods, rules and regulations,
2. They have valuable experience with the US transit employee culture,
3. They have vast experience with the US transit passenger (end user) culture, and,
4. They have a broad understanding of the State of California transit market, agencies and passenger demographics.

Both firms provided us with their standard labor rates for the specific tasks and DB added a reasonable mark-up for administration, risk and profit as allowed by the Federal Acquisition Regulations. In addition to HDR and ACI, DB plans to utilize Small, Disadvantaged, Women Owned and Disadvantaged Veterans Businesses throughout the First Phase in areas where their capabilities match the task order and Key Deliverable scope of work. We are costing these firms into the resource loaded schedule tasks based on our forecasted schedule. Immediately after NTP, the schedule and associated tasks will be further defined and specific levels of support will be calculated based on the actual scope of work contained within the task orders with associated delivery dates. The labor rates for the SB, DB, WB and VDB enterprises were provided to DB by the respective firms and a mark-up fee of 5% of administration and 10% for profit is added allowed by the Federal Acquisition Regulations.

Travel and Per Diem Expenses:
Travel expenses are only general cost estimates. It is understood that travel expenses incurred outside of the Task Orders will not be reimbursed. It is also understood that expense in excess of those allowed by the state travel policies will also not be reimbursed. The objective is keep travel costs to a minimum by utilizing conference calling, video conferencing and (virtual office) remote working for team members other than the 4 key personnel. In all cases, the DB team will submit expenses in accordance with the State of California Travel and Per Diem Rates as defined by the regulations and policies contained in the web site link in the RFP. As travel and other related expenses are direct costs of the contractor, they will be marked up with an administration fee of 5% and 10% for profit.

Insurance: Specific to the First Phase execution: DB will acquire the appropriate insurances as defined by the RFP. These premiums will be marked up with an administration fee of 5% and 10% for profit.

Taxes:
DB acknowledges that the project is exempt from all Federal Excise Taxes.

Cost Principles:
DB acknowledges that it's cost and pricing contained in this proposal comply with applicable Federal Acquisition Regulations and CFR regulations and guidelines.

2 Cost Proposal Schedule for the 1st Twelve Months

Project Management		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	8,310	**618**	**640**	**598**	**618**	**588**	**636**	**826**	**744**	**744**	**760**	**745**	**793**
Project Director ETO (DB)	1750	150	150	160	160	150	100	160	160	160	168	80	152
Lead Commercial Advisor ETO (DB)	1750	150	150	150	160	100	168	160	160	160	80	160	152
Lead Operating Manager (DB)	1750	150	150	150	100	150	170	160	160	80	168	160	152
Lead Procurement Advisor(DB)	1750	152	152	100	160	150	160	164	80	160	160	160	152
Operation Integration Manager (ACI)	864							144	144	144	144	144	144
Small Business Manager (Pendergast Consulting Group)	192	16	16	16	16	16	16	16	16	16	16	16	16
Risk Manager (HDR)	254		22	22	22	22	22	22	24	24	24	25	25

Ridership and passenger revenue forecasting		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	728	**0**	**80**	**80**	**160**	**88**	**80**	**40**	**40**	**40**	**40**	**40**	**40**
Ridership & Forecasting Expert I (DB)	728		80	80	160	88	80	40	40	40	40	40	40

Preferred revenue collection systems		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	930	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**186**	**186**	**186**	**186**	**186**
Revenue Collection Systems Expert (ACUMEN)	800								160	160	160	160	160
Fare Integration Expert & Interoperability Expert (HDR)	130								26	26	26	26	26

Consulting Services for Rolling Stock fleet size and design and interior layout		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	440	**0**	**0**	**0**	**0**	**100**	**100**	**40**	**40**	**40**	**40**	**40**	**40**
Operations & Maintenance Expert (ACI)	160					20	20	20	20	20	20	20	20
Rolling Stock & Fleet Expert (ACI)	280					80	80	20	20	20	20	20	20

Service planning and scheduling		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	448	**0**	**0**	**0**	**0**	**48**	**40**	**40**	**40**	**40**	**80**	**80**	**80**
Operations & Maintenance Expert (ACI)	448					48	40	40	40	40	80	80	80

Operations and maintenance (O&M) cost forecasting		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	344	**0**	**40**	**40**	**40**	**40**	**40**	**24**	**24**	**24**	**24**	**24**	**24**
Operations & Maintenance Expert (ACI)	344		40	40	40	40	40	24	24	24	24	24	24

Station Design & Operations		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	669	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**164**	**164**	**165**	**176**
Operations & Maintenance Expert (ACI)	64									16	16	16	16
Architect (FMG)	445									108	108	109	120
Economist / Financial Expert (HDR)	160									40	40	40	40

Optimization of LCC		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	120	**0**	**0**								**40**	**40**	**40**
LCC Expert (ACI)	60										20	20	20
Economist / Financial Expert (HDR)	60										20	20	20

Procurements		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	1496	**0**	**136**	**136**	**136**	**136**	**136**	**136**	**136**	**136**	**136**	**136**	**136**
Rolling Stock & Fleet Expert (DB)	440		40	40	40	40	40	40	40	40	40	40	40
Procurement Expert (ACI)	1056		96	96	96	96	96	96	96	96	96	96	96

Fare integration and inter-operability		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	1408	**0**	**0**	**0**	**0**	**176**	**176**	**176**	**176**	**176**	**176**	**176**	**176**
Fare Integration Expert & Interoperability Expert (Acumen)	1280					160	160	160	160	160	160	160	160
Service Planning & Scheduling Expert (ACI)	128					16	16	16	16	16	16	16	16

Safety and Security arrangements for the system		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	577	**0**	**0**	**0**	**0**	**160**	**176**	**41**	**40**	**40**	**40**	**40**	**40**
Safety & Security Expert (B&G)	577					160	176	41	40	40	40	40	40

Operations control systems including dispatching responsibilities.		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	448	0	0	0	0	56	56	56	56	56	56	56	56
Operations Expert (ACI)	448					56	56	56	56	56	56	56	56

Opportunities to maximize system revenues		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	1488	**0**	**40**	**80**	**120**	**156**	**156**	**156**	**156**	**156**	**156**	**156**	**156**
Economist / Financial Expert (HDR)	1488		40	80	120	156	156	156	156	156	156	156	156

Marketing and branding strategy for the system		1	2	3	4	5	6	7	8	9	10	11	12
Role	**Total Budgeted Units**	**Nov-17**	**01-Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**
	1104	**0**	**0**	**0**	**0**	**138**	**138**	**138**	**138**	**138**	**138**	**138**	**138**
Marketing & Branding Expert (Sagent)	1104					138	138	138	138	138	138	138	138

3 Cost Proposal Pricing Sheet

Consulting Services for Project Management								
Position by Name/Classification	**Billing Rate**	**Number of hours**		**Total hours**	**Other direct Costs (ODC)**			**Total Costs (Billing x total hours + (OCD)**
		Working in Sacramento	**Not in Sacramento**		**Travel**	**Relocation**	**Other**	
Project Director ETO (DB)	$282.00	1750		1750		$30,000.00		$523,500.00
Lead Commercial Advisor ETO (DB)	$282.00	1750		1750				$493,500.00
Lead Operating Manager (DB)	$282.00	1750		1750		$25,000.00		$518,500.00
Lead Procurement Advisor(DB)	$282.00	1750		1750		$25,000.00		$518,500.00
Operation Integration Manager (ACI)	$251.23	864		864				$217,061.86
Small Business Manager (Pendergast Consulting Group)	$221.31	192		192				$42,490.75
Risk Manager (HDR)	$235.81	254		254				$59,896.09
Professional Liability Insurance								$106,950.00
TOTALS				**8310**				**$2,480,398.70**
Description of Deliverables:	KEY DELIVERABLE 1; Project Management Services; Small Business Management; Updating of the Authorities Risk Register; KEY DELIVERABLE 7 - Mobilization plan for pre-operations testing and training. (Keymilestone to commence negotiations of the Franchise Agreement and Condition Precedent to effectiveness of Franchise Agreement)							
Projected Timeline:	Oct 17 - Sep 23							
Projected Percentage to be completed in 12 months from NTP:	14%							

Consulting Services for Ridership & Passenger Revenue Forecast								
Position by Name/Classification	**Billing Rate**	**Number of hours**		**Total hours**	**Other direct Costs (ODC)**			**Total Costs (Billing x total hours + (OCD)**
		Working in Sacramento	**Not in Sacramento**		**Travel**	**Relocation**	**Other**	
Ridership & Forecasting Expert I (DB)	$195.61	73	655	728	$3,283.10			$145,689.50
TOTALS				**728**				**$145,689.50**
Description of Deliverables:	KEY DELIVERABLE 2 - Calculation of Ridership and Passenger Revenue forecast; Input for Business Plan 2018 and KD 11 Interims Financial Plan							
Projected Timeline:	Dec 17 - Sep 18							
Projected Percentage to be completed in 12 months from NTP:	100%							

Consulting Services for preferred revenue collection systems								
Position by Name/Classification	**Billing Rate**	**Number of hours**		**Total hours**	**Other direct Costs (ODC)**			**Total Costs (Billing x total hours + (OCD)**
		Working in Sacramento	**Not in Sacramento**		**Travel**	**Relocation**	**Other**	
Revenue Collection Systems Expert (ACUMEN)	$272.00		800	800				$217,597.81
Fare Integration Expert & Interoperability Expert (HDR)	$331.01		130	130				$43,030.79
TOTALS				**930**				**$260,628.60**
Description of Deliverables:	KEY DELIVERABLE 5 - Analysis and report on preferred revenue collection systems.							
Projected Timeline:	May 18 - Feb 19							
Projected Percentage to be completed in 12 months from NTP:	47%							

Consulting Services for Rolling Stock fleet size and design and interior layout								
Position by Name/Classification	**Billing Rate**	**Number of hours**		**Total hours**	**Other direct Costs (ODC)**			**Total Costs (Billing x total hours + (OCD)**
		Working in Sacramento	**Not in Sacramento**		**Travel**	**Relocation**	**Other**	
Operations & Maintenance Expert (ACI)	$238.83		160	160				$38,213.12
Rolling Stock & Fleet Expert (ACI)	$238.83		280	280				$66,872.96
TOTALS				**440**				**$105,086.08**
Description of Deliverables:	Relevant to Procurements (KD 11) and Operations and Maintenance Forecast (KD 4) Input for LCC and LCC input for Rolling stock fleet size and interior layout							
Projected Timeline:	Mar 18 - May 19							
Projected Percentage to be completed in 12 months from NTP:	29%							

Consultancy Services for service planning and scheduling								
Position by Name/Classification	Billing Rate	Number of hours		Total hours	Other direct Costs (ODC)			Total Costs (Billing x total hours + (OCD)
		Working in Sacramento	Not in Sacramento		Travel	Relocation	Other	
Operations & Maintenance Expert (ACI)	$238.83	89.6	358.4	448	$4,579.20			$111,575.94
TOTALS				**448**				**$111,575.94**
Description of Deliverables:	KEY DELIVERABLE 6 - Integration plan for State wide rail service Relevant to Ridership & Revenue Forecast (KD 2); Ancillary revenue scenario analysis (KD 3); Service planning							
Projected Timeline:	Aug 18 - Dec 19							
Projected Percentage to be completed in 12 months from NTP:	25%							

Consultancy Services for Operations and maintenance (O&M) cost forecasting								
Position by Name/Classification	Billing Rate	Number of hours		Total hours	Other direct Costs (ODC)			Total Costs (Billing x total hours + (OCD)
Operations & Maintenance Expert (ACI)	$238.83		344	344				$82,158.21
TOTALS				**344**				**$82,158.21**
Description of Deliverables:	KEY DELIVERABLE 4 - Calculation of operations and maintenance cost estimates Major input for Interims Financial Plan							
Projected Timeline:	Mar 18 - Jun 20							
Projected Percentage to be completed in 12 months from NTP:	19%							

Consultancy Services for Station Design & Operations								
Position by Name/Classification	Billing Rate	Number of hours		Total hours	Other direct Costs (ODC)			Total Costs (Billing x total hours + (OCD)
Operations & Maintenance Expert (ACI)	$238.83		64	64				$15,285.25
Architect (FMG)	$222.99		445	445				$99,228.33
Economist / Financial Expert (HDR)	$309.32	160		160				$49,490.84
TOTALS				**669**				**$164,004.42**
Description of Deliverables:	Support to RDP with Station Layout Develop individual Station operation plans							
Projected Timeline:	Dec 17 - Jun 19							
Projected Percentage to be completed in 12 months from NTP:	35%							

Consultancy Services for Optimization of LCC								
Position by Name/Classification	Billing Rate	Number of hours		Total hours	Other direct Costs (ODC)			Total Costs (Billing x total hours + (OCD)
		Working in Sacramento	Not in Sacramento		Travel	Relocation	Other	
LCC Expert (ACI)	$238.83		120	120				$28,659.84
Economist / Financial Expert (HDR)	$309.32	60		60				$18,559.07
TOTALS				**180**				**$18,559.07**
Description of Deliverables:	Support to Procurements (KD 11); Ridership & Revenue Forecast (KD 2); Operations and Maintenance Costs (KD 4) and Interim Finacial Plan (KD 10)							
Projected Timeline:	Dec 17 - Sep 18							
Projected Percentage to be completed in 12 months from NTP:	35%							

Consultancy Services for Procurements								
Position by Name/Classification	Billing Rate	Number of hours		Total hours	Other direct Costs (ODC)			Total Costs (Billing x total hours + (OCD)
		Working in Sacramento	Not in Sacramento		Travel	Relocation	Other	
Rolling Stock & Fleet Expert (DB)	$195.61		440	440				$86,069.80
Procurement Expert (ACI)	$238.83		1056	1056				$252,206.59
TOTALS				**1496**				**$338,276.39**
Description of Deliverables:	KEY DELIVERABLE 11 - Formal concurrence on procurement process/documents substancial to achieve Key Milestone 2 and 3 to commence negotiations of Franchise Agreement							
Projected Timeline:	Dec 17 - Oct 18							
Projected Percentage to be completed in 12 months from NTP:	100%							

Consultancy Services for Fare integration and inter-operability								
Position by Name/Classification	**Billing Rate**	**Number of hours**		**Total hours**	**Other direct Costs (ODC)**			**Total Costs (Billing x total hours + (OCD)**
		Working in Sacramento	**Not in Sacramento**		**Travel**	**Relocation**	**Other**	
Fare Integration Expert & Interoperability Expert (Acumen)	$272.00		1280	1280				$348,156.50
Service Planning & Scheduling Expert (ACI)	$238.83		128	128				$30,570.50
TOTALS				**1408**				**$378,726.99**
Description of Deliverables:	KEY DELIVERABLE 6 - Integration plan for State wide rail service Relevant to Ridership & Revenue Forecast (KD 2); Ancillary revenue scenario analysis (KD 3); Service planning							
Projected Timeline:	Mar 18 - Aug 21							
Projected Percentage to be completed in 12 months from NTP:	90%							

Consultancy Services for Safety and Security arrangements for the system								
Position by Name/Classification	**Billing Rate**	**Number of hours**		**Total hours**	**Other direct Costs (ODC)**			**Total Costs (Billing x total hours + (OCD)**
		Working in Sacramento	**Not in Sacramento**		**Travel**	**Relocation**	**Other**	
Safety & Security Expert (B&G)	$97.75		577	577				$56,401.75
TOTALS				**577**				**$56,401.75**
Description of Deliverables:	KEY DELIVERABLE 8 - Preparation of a safety plan; Relevant to Phase 2 System safety planning and management and system security coordination;							
Projected Timeline:	Dec 17 - Jan 21							
Projected Percentage to be completed in 12 months from NTP:	29%							

Consultancy Services for Operations control systems including dispatching responsibilities								
Position by Name/Classification	**Billing Rate**	**Number of hours**		**Total hours**	**Other direct Costs (ODC)**			**Total Costs (Billing x total hours + (OCD)**
Operations Expert (ACI)	$251.23		448	448				$112,550.59
TOTALS				**448**				**$112,550.59**
Description of Deliverables:	Determination of location of OCC; Interfacing with other dispatching authorities to define hand over procedures and solutions for dispatching approach							
Projected Timeline:	Jan 18 - Aug 18							
Projected Percentage to be completed in 12 months from NTP:	22%							

Consultancy Services for Opportunities to maximize system revenues								
Position by Name/Classification	**Billing Rate**	**Number of hours**		**Total hours**	**Other direct Costs (ODC)**			**Total Costs (Billing x total hours + (OCD)**
		Working in Sacramento	**Not in Sacramento**		**Travel**	**Relocation**	**Other**	
Economist / Financial Expert (HDR)	$309.32	1488		1488				$460,264.85
TOTALS				**1488**				**$460,264.85**
Description of Deliverables:	KEY DELIVERABLE 3 - Ancillary revenue scenario analysis Major input for Interims Finacial Plan							
Projected Timeline:	Nov 17 - Nov 19							
Projected Percentage to be completed in 12 months from NTP:	74%							

Consultancy Services for Marketing and branding strategy for the system								
Position by Name/Classification	**Billing Rate**	**Number of hours**		**Total hours**	**Other direct Costs (ODC)**			**Total Costs (Billing x total hours + (OCD)**
		Working in Sacramento	**Not in Sacramento**		**Travel**	**Relocation**	**Other**	
Marketing & Branding Expert (Sagent)	$258.75	1104		1104				$285,660.00
TOTALS				**1104**				**$285,660.00**
Description of Deliverables:	KEY DELIVERABLE 9 - Plan to market and brand the System.							
Projected Timeline:	Mar 18 - Mar 23							
Projected Percentage to be completed in 12 months from NTP:	28%							
TOTALS FOR PROJECTED 12 months:				**18570**				**$4,999,981.08**